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Rev. 07/10/02

SAUGET AREA 2,
SAUGET, ILLINOIS

REMEDIAL INVESTIGATION/ FEASIBILITY STUDY REPORT VOLUME 2

Tables and Figures

Prepared for

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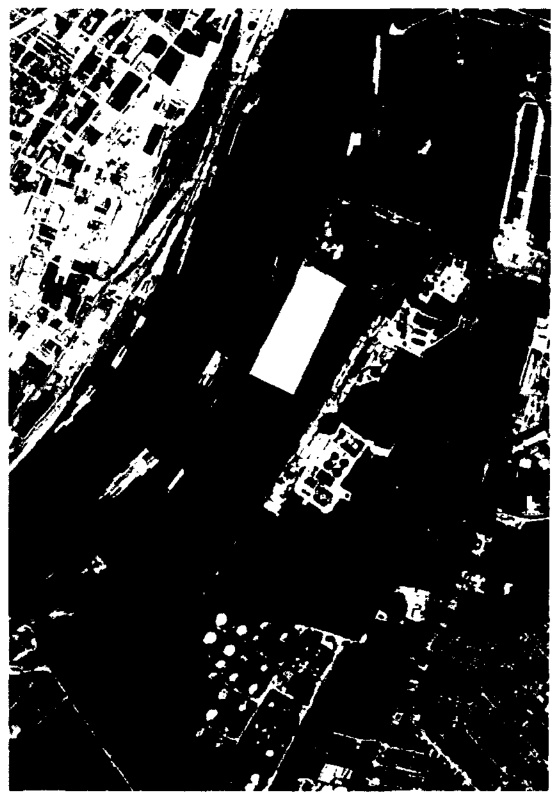

January 30, 2004

URS

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Project #21560888.07001

Tables

Table 3-1
Soil Gas Samples
Sauget Area 2 RI/FS

Site Name	Proposed Sample Locations	Actual Sample Locations	Step-out Locations
O	49	47	2
P	34	27	2
Q	228	228	4
R	32	32	1
S	5	5	6

Note:
The locations that were not sampled were due to access issues such as no legal access, located in large ravines or water, or physical obstacles. These changes were all approved by CH2MHill personnel, the USEPA Region V on-site representatives.

Table 3-2
Summary of Boundary and Anomaly Trench Data
Sauget Area 2 RI/FS

Trench Location	Trench Date	Waste Encountered	Type of Waste Material	Evidence of Industrial Waste	Comments
Site O					
BT-O-01	6/17/2002	Yes	Native Soil Grading to Lagoon Fill	Lagoon Sludge	Boundary Located, See Field Notebook #2 for Trench Details
BT-O-02	6/17/2002	Yes	Native Soil Grading to Lagoon Fill	Lagoon Sludge	Boundary Located, See Field Notebook #2 for Trench Details
BT-O-03	6/17/2002	Yes	Native Soil Grading to Lagoon Fill	Lagoon Sludge	Boundary Located, See Field Notebook #2 for Trench Details
BT-O-04	6/14/2002	Yes	Native Soil Grading to Lagoon Fill	Lagoon Sludge	Boundary Located, See Field Notebook #2 for Trench Details
Site P					
BT-P-01	6/12/2002	Yes	Municipal Waste	No	Boundary Located, See Field Notebook #2 for Trench Details
BT-P-02	6/12/2002	Yes	Municipal Waste	No	Boundary Located, See Field Notebook #2 for Trench Details
BT-P-03	6/12/2002	Yes	Municipal Waste	Drum Lid	Boundary Not Located
BT-P-04	6/12/2002	Yes	Municipal Waste	No	**Boundary Not Located - Road Present in Step-Out Direction**
AT-P-01	8/14/2002	Yes	Construction Debris	Drum Remnants	None
Site Q					
BT-Q-01	6/10/2002	Yes	Municipal Waste	NAPL	**Boundary Not Located - Road/Utilities Present in Step-Out Direction**
BT-Q-02	NA	NA	NA	NA	Boundary Trench in Same Location as BT-R-03
BT-Q-03	6/5/2002	Yes	Municipal Waste	No	**Boundary Not Located - Road Present in Step-Out Direction**
BT-Q-04	NA	NA	NA	NA	Boundary Trench in Same Location as BT-R-04
BT-Q-05	6/21/2002	No	NA	No	Boundary Not Located, Wood Chips and Coal Cinders Observed Over Length of Trench
BT-Q-06	6/6/2002	Yes	Municipal Waste	No	Boundary Not Located, Could Not Step Out Full 40' Due to Mulch Piles and Pond
BT-Q-07	6/10/2002	Yes	Municipal Waste	Drum Remnants	Boundary Not Located
BT-Q-08	8/12/2002	Yes	Municipal Waste	No	Boundary Located, See Field Notebook #2 for Trench Details
BT-Q-09	8/12/2002	Yes	Municipal Waste	No	Boundary Located, See Field Notebook #2 for Trench Details
BT-Q-10	8/12/2002	No	NA	No	Boundary Not Located
AT-Q-11	6/5/2002	Yes	Municipal Waste	Drum Remnants	Observed Fiber Drum Remnant with "Monsanto" Printed on Side
AT-Q-12	6/6/2002	Yes	Construction Debris	No	None
AT-Q-13	6/6/2002	Yes	Construction Debris	No	None
AT-Q-14	6/11/2002	Yes	Construction Debris	No	None
AT-Q-15	6/7/2002	Yes	Municipal Waste	Drum Lid	None
AT-Q-16	6/11/2002	Yes	Construction Debris	No	Encountered Concrete Slab Approx. 3' bgs at 3 Offset Locations
AT-Q-17	NA	NA	NA	NA	Trench Not Advanced Due to the Placement of Approximately 30' of Fill Material
AT-Q-18	8/12/2002	Yes	Municipal Waste	Metal Tank ~ 55 gal.	None
Site R					
BT-R-01	6/19/2002	Yes	Industrial Waste	White Crystalline Material	**Boundary Not Located - Road Present in Step-Out Direction**
BT-R-02	6/20/2002	Yes	Industrial Waste	Drum Remnants	Boundary Located, See Field Notebook #2 for Trench Details
BT-R-03	6/21/2002	Yes	Industrial Waste	Drum Remnants	Boundary Not Located, Trench Location Adjacent to Site Q
BT-R-04	6/20/2002	Yes	Industrial Waste	White Crystalline Material	Boundary Located, See Field Notebook #2 for Trench Details
AT-R-01	8/13/2002	Yes	Industrial Waste	Drum Remnants	None
Site S					
BT-S-01	6/13/2002	Yes	Industrial Waste	Drum Remnants	Boundary Located, See Field Notebook #2 for Trench Details
BT-S-02	6/14/2002	Yes	Industrial Waste	Drum Remnants, NAPL	**Boundary Not Located - Utilities Present in Step-Out Direction**
BT-S-03	6/13/2002	No	NA	No	Boundary Not Located - Sandy Native Soil Observed Over Length of Trench
BT-S-04	6/14/2002	Yes	Industrial Waste	Drum Remnants	Boundary Located, See Field Notebook #2 for Trench Details
AT-S-01	8/14/2002	Yes	Industrial Waste	Drum Remnants	URS Upgraded to Level B PPE

Notes:
NAPL - Non-Aqueous Phase Liquid
bgs - Below Ground Surface
NA - Not Applicable

Table 3-3
Waste Boring Details
Sauget Area 2

Boring	Total Depth (ft)	Top of Waste (ft)	Bottom of Waste (ft)	Water Depth (ft bgs)	Cap Thickness (ft)	Depth of VOC, Dioxin, and TCLP Extract for VOC and Dioxin Sample (ft)	Composite Suite*
WASTE-O-1	20	0.5	15	15	0.5	4	X
WASTE-O -2	20	6	11	10	6	7	X
WASTE-O-3	20	4	10	13	4	9	X
WASTE-P-1	27	0	18	17	NA	15	X
WASTE-P-2	40	0	30	20	NA	6	X
WASTE-P-3	27	0	24	24	NA	22	X
WASTE-P-4	26	1	19	10	NA	17	X
WASTE-Q-1	22	1	12	16	NA	5	X
WASTE-Q-2	27	0	18	22	NA	8	X
WASTE-Q-3	17	0	9	12	NA	6	X
WASTE-Q-4	17	0	13	7	NA	7, 9 **	X
WASTE-Q-5	17	0	12	12	NA	8	X
WASTE-Q-6	18	0	16	16	NA	15	X
WASTE-Q-7	26	0	16	16.5	NA	9	X
WASTE-Q-8	28	0	18	NA	NA	7	X
WASTE-Q-9	27	0	9	7	NA	8	X
WASTE-Q-10	27	0	18	18	NA	8	X
WASTE-Q-11	17	0	9	10.5	NA	8	X
WASTE-Q-12	16	0	5	18	NA	4	X
WASTE-R-1	32	6	25	24	6	19	X
WASTE-R-2	28	6	21	25	6	20	X
WASTE-R-3	24	4.5	26	NA	4.5	22	X
WASTE-R-4	28	13	19	26	13.0	24	X
WASTE-S-1	16	0.5	10	10	0.5	6	X
WASTE-S-2	12	0.5	7	6	0.5	6	X

Notes:
NA - Not applicable
* The full suite of analyses include SVOC, Pesticides, Herbicides, PCBs, and Metals and a TCLP Extract for SVOC, Pesticides, Herbicides, PCBs, and Metals
** TCLP Extract for VOC and Dioxin collected at 7 ft bgs, VOC and Dioxin sample collected at 9 ft bgs

Table 3-4
Waste Boring Sample Analysis
Sauget Area 2 RI/FS

Location	Depth Sample was Taken (ft)	VOCs and Dioxin	TCLP Extract for VOCs and Dioxin	Suite*	TCLP Extract Suite*
O-1	4	X	X		
	Composite			X	X
O-2	7	X	X		
	Composite			X	X
O-3	9	X	X		
	Composite			X	X
P-1	15	X	X		
	Composite			X	X
P-2	6	X	X		
	Composite			X	X
P-3	22	X	X		
	Composite			X	X
P-4	17	X	X		
	Composite			X	X
Q-1	5	X	X		
	Composite			X	X
Q-2	8	X	X		
	Composite			X	X
Q-3	6	X	X		
	Composite			X	X
Q-4	7		X		
	9	X			
	Composite			X	X
Q-5	8	X	X		
	Composite			X	X
Q-6	15	X	X		
	Composite			X	X
Q-7	9	X	X		
	Composite			X	X
Q-8	7	X	X		
	Composite			X	X
Q-9	8	X	X		
	Composite			X	X
Q-10	8	X	X		
	Composite			X	X
Q-11	8	X	X		
	Composite			X	X
Q-12	4	X	X		
	Composite			X	X
R-1	19	X	X		
	Composite			X	X
R-2	20	X	X		
	Composite			X	X
R-3	22	X	X		
	Composite			X	X
R-4	24		X		
	Composite				
S-1	6	X	X		
	Composite			X	X
S-2	6	X	X		
	Composite			X	X

Notes:
* Pesticides, Herbicides, PCBs, and Metals

Table 3-5
Water Level Record
Sauget Area 2 RI/FS

Well No.	Ground Elevation (ft)*	TOC Elevation (ft)*	Total Depth of Well (ft)**	Screened Interval (ft)**	Depth to Water (ft)***	Water Elevation (ft)*	Depth to Water (ft)***	Water Elevation (ft)*	Depth to Water (ft)***	Water Elevation (ft)*	Depth to Water (ft)***	Water Elevation (ft)*
					9/23/2002		1/23/2003		4/22/2003		6/9/2003	
Leach-O-1	407.77	410.56	14	9 to 14	17.02	393.54	17.11	393.45	17.02	393.54	17.03	393.53
Leach-P-1	422.09	424.69	22	12 to 22	24.82	399.87	Dry	---	24.84	399.85	24.90	399.79
Leach-Q-1	419.55	419.00	12	7 to 12	10.33	408.67	10.42	408.58	10.03	408.97	9.67	409.33
Leach-Q-2	420.94	420.31	16	11 to 16	15.56	404.75	NM	---	Dry	---	15.02	---
Leach-Q-3	412.40	414.83	9	6.5 to 9	10.88	403.95	10.9	403.93	10.83	404.00	10.86	403.97
Leach-R-1	425.85	428.60	22	12 to 22	20.53	408.07	21.1	407.50	20.53	408.07	21.26	407.34
Leach-S-1	410.84	413.15	7	4.5 to 7	9.51	403.64	9.55	403.60	9.49	403.66	Dry	---
Bdrk-O-1	408.19	410.27	150	145 to 150	19.55	390.72	25.06	385.21	23.78	386.49	17.80	392.47
Bdrk-P-1	408.02	410.59	155	150 to 155	139.23	271.36	53.44	357.15	109.18	301.41	124.41	286.18
Bdrk-Q-1	420.58	422.96	160	155 to 160	37.06	385.90	43.58	379.38	38.17	384.79	32.71	390.25
Bdrk-Q-2	407.84	410.53	140	135 to 140	20.11	390.42	25.09	385.44	23.78	386.75	17.54	392.99
Bdrk-R-1	417.98	420.23	160	155 to 160	31.31	388.92	37.61	382.62	34.67	385.56	27.90	392.33
Bdrk-S-1	411.27	411.19	162	157 to 162	22.67	388.52	28.64	382.55	25.77	385.42	19.25	391.94
Piez-1S	413.83	416.54	23	13 to 23	Dry	---	Dry	---	Dry	---	Dry	---
Piez-1M	413.83	416.26	77	67 to 77	31.26	385.00	37.98	378.28	31.69	384.57	26.54	389.72
Piez-1D	413.83	416.39	127	117 to 127	31.37	385.02	38.05	378.34	31.77	384.62	26.64	389.75
Piez-2S	417.82	417.48	27	17 to 27	Dry	---	Dry	---	Dry	---	26.22	391.26
Piez-2M	417.82	417.57	78	68 to 78	30.31	387.26	36.33	381.24	32.48	385.09	26.59	390.98
Piez-2D	417.82	417.56	137	127 to 137	30.29	387.27	36.22	381.34	32.39	385.17	26.51	391.05
Piez-3S	415.03	417.80	35	25 to 35	27.91	389.89	32.99	384.81	31.72	386.08	25.96	391.84
Piez-3M	415.03	417.84	75.5	65.5 to 75.5	27.89	389.95	32.95	384.89	31.70	386.14	25.94	391.90
Piez-3D	415.03	417.66	112	102 to 112	27.76	389.90	32.85	384.81	31.46	386.20	25.83	391.83
Piez-4S	419.08	421.86	50	40 to 50	36.27	385.59	42.90	378.96	37.33	384.53	32.13	389.73
Piez-4M	419.08	422.02	91	81 to 91	36.35	385.67	42.99	379.03	37.30	384.72	32.16	389.86
Piez-4D	419.08	422.00	129	119 to 129	35.83	386.17	42.39	379.61	37.13	384.87	31.84	390.16
Piez-5S	405.74	408.62	23	13 to 23	16.81	391.81	22.02	386.60	21.45	387.17	15.88	392.74
Piez-5M	405.74	408.49	67	57 to 67	16.77	391.72	21.95	386.54	21.33	387.16	15.79	392.70
Piez-5D	405.74	408.61	106	96 to 106	17.06	391.55	22.30	386.31	21.52	387.09	15.90	392.71
Piez-6S	410.97	413.76	27	17 to 27	19.37	394.39	23.72	390.04	24.42	389.34	20.56	393.20
Piez-6M	410.97	413.62	72	62 to 72	19.28	394.34	23.60	390.02	24.27	389.35	20.37	393.25
Piez-6D	410.97	413.70	112.5	102.5 to 112.5	19.34	394.36	23.59	390.11	24.25	389.45	20.38	393.32
Piez-7S	414.42	417.02	25	15 to 25	Dry	---	Dry	---	Dry	---	22.46	394.56
Piez-7M	414.42	417.10	72.5	62.5 to 72.5	32.84	384.26	39.72	377.38	32.91	384.19	28.04	389.06
Piez-7D	414.42	417.02	115	105 to 115	32.51	384.51	38.95	378.07	32.62	384.40	27.59	389.43
Piez-8S	400.97	403.82	19	9 to 19	9.89	393.93	13.25	390.57	13.83	389.99	9.10	394.72
Piez-8M	400.97	403.84	66	56 to 66	10.71	393.13	14.84	389.00	14.95	388.89	9.87	393.97
Piez-8D	400.97	403.81	108	98 to 108	10.61	393.20	14.48	389.33	14.59	389.22	9.83	393.98
Piez-9S	403.00	402.75	19	9 to 19	7.79	394.96	10.71	392.04	11.38	391.37	8.09	394.66
Piez-9M	403.00	402.82	64.5	54.5 to 64.5	7.84	394.98	10.77	392.05	11.45	391.37	8.14	394.68
Piez-9D	403.00	402.71	105	95 to 105	7.71	395.00	10.64	392.07	11.32	391.39	8.02	394.69

Notes:
TOC - Top of casing
NM - Not measured
* Elevation based upon USGS datum
** Feet below ground surface
*** Depth to water is measured from TOC

Table 3-6a
Alluvial Aquifer Sample Analysis for Site O
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
O-1	16	X	X	X	X		
	26	X	X				
	36	X	X				
	46	X	X				
	56	X	X	X			
	66	X	X				
	76	X	X		X		
	86	X	X				
	96	X	X	X			
	106	X	X				
	116	X	X				
	120	X	X	X	X		
O-2	13	X	X	X			
	23	X	X				
	33	X	X				
	43	X	X				
	53	X	X	X			
	63	X	X				
	73	X	X				
	83	X	X				
	93	X	X	X			
	103	X	X				
	113	X	X				
	121	X	X				
	124	X	X	X			
O-3	28	X	X	X			
	38	X	X				
	48	X	X				
	58	X	X				
	68	X	X	X			
	78	X	X				
	88	X	X				
	98	X	X				
	108	X	X	X			
	118	X	X				
	128	X	X	X			

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane, and $C0_2$

Table 3-6b
Alluvial Aquifer Sample Analysis for Site P
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
P-1	24	X	X	X	X		
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X			
	74	X	X		X		
	84	X	X				
	94	X	X				
	104	X	X	X			
	114	X	X				
	120	X	X	X	X		
P-2	24	X	X	X		X	X
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X		X	X
	74	X	X				
	84	X	X				
	94	X	X				
	104	X	X	X		X	X
	114	X	X				
	122	X	X	X		X	X
P-3	32	X	X	X		X	X
	42	X	X				
	52	X	X				
	62	X	X				
	72	X	X	X		X	X
	82	X	X				
	92	X	X				
	102	X	X				
	112	X	X	X		X	X
	122	X	X				
	126	X	X	X		X	X

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane, and $C0_2$

Table 3-6c
Alluvial Aquifer Sample Analysis for Site Q
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
Q-1	50	X	X	X		X	X
	60	X	X				
	70	X	X				
	80	X	X	X			
	90	X	X				
	100	X	X				
	110	X	X				
	120	X	X	X		X	X
	127.5	X	X	X		X	X
Q-2	60	X	X	X	X	X	X
	70	X	X				
	80	X	X	X			
	90	X	X				
	100	X	X		X		
	110	X	X				
	120	X	X	X		X	X
	130	X	X	X	X	X	X
Q-3	50	X	X	X		X	X
	60	X	X				
	70	X	X				
	80	X	X	X			
	90	X	X				
	100	X	X				
	110	X	X				
	120	X	X	X		X	X
Q-4	50	X	X	X		X	X
	60	X	X				
	70	X	X				
	80	X	X	X			
	90	X	X				
	100	X	X				
	110	X	X	X		X	X
Q-5	45	X	X	X		X	X
	55	X	X				
	65	X	X				
	75	X	X				
	85	X	X	X		X	X
	95	X	X				
	105/106	X	X	X		X	X

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane,

Table 3-6c
Alluvial Aquifer Sample Analysis for Site Q
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
Q-6	24	X	X	X		X	X
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X		X	X
	64	X	X	X		X	X
	74	X	X				
	84	X	X				
	94	X	X				
	104	X	X	X		X	X
	110	X	X	X		X	X
Q-7	24	X	X	X	X	X	X
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X		X	X
	74	X	X				
	84	X	X		X		
	94	X	X				
	104	X	X	X	X	X	X
Q-8	24	X	X	X		X	X
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X		X	X
	74	X	X				
	84	X	X				
	94	X	X				
	104	X	X	X		X	X
	111	X	X	X		X	X

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane, and $C0_2$

Table 3-6d
Alluvial Aquifer Sample Analysis for Site R
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
R-1	28	X	X	X	X		
	48	X	X				
	58	X	X		X		
	68	X	X				
	78	X	X	X			
	88	X	X				
	98	X	X				
	108	X	X				
	118	X	X				
	128	X	X				
	131	X	X	X	X		

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane, and CO_2

Table 3-6e
Alluvial Aquifer Sample Analysis for Site S
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
S-1	24	X	X	X	X		
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X			
	74	X	X				
	84	X	X		X		
	94	X	X				
	104	X	X	X			
	114	X	X				
	124	X	X	X	X		
S-2	28	X	X	X			
	38	X	X				
	48	X	X				
	58	X	X				
	68	X	X				
	78	X	X	X			
	88	X	X				
	98	X	X				
	108	X	X				
	118/118.5	X	X	X			
S-3	24	X	X	X			
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X			
	74	X	X				
	84	X	X				
	94	X	X				
	104	X	X	X			
	114	X	X				
	124	X	X				
	132	X	X	X			

Notes:
* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane and CO_2

Table 3-6f
Alluvial Aquifer Sample Analysis for Upgradient Locations
Sauget Area 2 RI/FS

Location	Depth (ft)	VOCs	SVOCs	Suite*	Dioxin	Filtered SVOCs	Filtered Metals
UAA-1	20	X	X	X			
	30	X	X				
	40	X	X				
	50	X	X				
	60	X	X	X			
	70	X	X				
	80	X	X				
	90	X	X				
	100	X	X	X			
	110	X	X	X			
UAA-2	20	X	X	X	X		
	30	X	X				
	40	X	X				
	50	X	X				
	60	X	X	X	X		
	70	X	X				
	80	X	X				
	90	X	X				
	100	X	X	X			
	110	X	X				
	120	X	X				
	124	X	X	X	X		
UAA-3	24	X	X	X	X		
	34	X	X				
	44	X	X				
	54	X	X				
	64	X	X	X			
	74	X	X				
	84	X	X		X		
	94	X	X				
	104	X	X	X			
	114	X	X				
	116	X	X	X	X		
UAA-4	20	X	X	X		X	X
	30	X	X				
	40	X	X				
	50	X	X				
	60	X	X	X		X	X
	70	X	X				
	80	X	X				
	90	X	X				
	100	X	X	X		X	X
	110	X	X				
	113	X	X	X		X	X

Notes:

* The full suite of analyses include Pesticides, Herbicides, PCBs, Metals, ORP, DO, Ferrous Iron, Manganese, Nitrate, Sulfate, Alkalinity, Methane, and CO_2

Table 3-7
Surface & Subsurface Soil Sample Analysis
Sauget Area 2 RI/FS

Location	Depth Sample was Taken (ft)	VOCs	Suite*
O-1	0.5	X	X
	6	X	X
O-2	0.5	X	X
	6	X	X
O-3	0.5	X	X
	6	X	X
P-1	0.5	X	X
	6	X	X
P-2	0.5	X	X
	6	X	X
P-3	0.5	X	X
	6	X	X
P-4	0.5	X	X
	6	X	X
Q-1	0.5	X	X
	6	X	X
Q-2	0.5	X	X
	6	X	X
Q-3	0.5	X	X
	6	X	X
Q-4	0.5	X	X
	6	X	X
Q-5	0.5	X	X
	6	X	X
Q-6	0.5	X	X
	6	X	X
Q-7	0.5	X	X
	6	X	X
Q-8	0.5	X	X
	6	X	X
Q-9	0.5	X	X
	6	X	X
Q-10	0.5	X	X
	6	X	X
Q-11	0.5	X	X
	6	X	X
Q-12	0.5	X	X
	6	X	X

Notes:
* Pesticides, Herbicides, PCBs, Metals, and Dioxin

Location	Depth Sample was Taken (ft)	VOCs	Suite*
Q-13	0.5	X	X
Q-14	0.5	X	X
Q-15	0.5	X	X
Q-16	0.5	X	X
Q-17	0.5	X	X
Q-18	0.5	X	X
Q-19	0.5	X	X
Q-20	0.5	X	X
R-1	0.5	X	X
	6	X	X
R-2	0.5	X	X
	6	X	X
R-3	0.5	X	X
	6	X	X
R-4	0.5	X	X
	6	X	X
S-1	0.5	X	X
	6	X	X
S-2	0.5	X	X
	6	X	X
OS-1	0.5	X	X
	6	X	X
OS-2	0.5	X	X
	6	X	X
OS-3	0.5	X	X
	6	X	X
OS-4	0.5	X	X
	6	X	X
OS-5	0.5	X	X
	6	X	X

Table 3-8
Stormwater Sample Analysis
Sauget Area 2 RI/FS

Sample Number	First Storm Date	Second Storm Date	Sample Analysis
STORM-R-1	9/18/2002	10/3/2002	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals
STORM-Q-1	9/18/2002	10/3/2002	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals
STORM-Q-2	9/18/2002	10/3/2002	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals

Table 3-9
Seep Sample Analysis
Sauget Area 2 RI/FS

Sample Number	Start Date	Date Completed	Sample Analysis
SEEP-Q-1	08/07/02	08/08/02	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals
SEEP-Q-2	08/07/02	08/08/02	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals
SEEP-R-1	08/08/02	08/09/02	VOCs, SVOCs, PCBs, dioxin, herbicides, pesticides and metals

Table 3-10
Quality Assurance/Quality Control Samples
Sauget Area 2 RI/FS

Sample Type	Total Samples Collected	QA/QC Samples Collected	% Collected	Goal %
Surface Soil				
Duplicate	38	4	10.5%	10.0%
MS/MSD	38	3	7.9%	5%
Trip Blank*	14	2	14.3%	100.0%
Subsurface Soil				
Duplicate	30	4	13.3%	10.0%
MS/MSD	30	3	10.0%	5.0%
Trip Blank*	14	2	14.3%	100.0%
Waste Sampling				
Duplicate	25	6	24.0%	10.0%
MS/MSD	25	4	16.0%	5.0%
Trip Blank*	11	0	0.0%	100.0%
Alluvial Aquifers				
Duplicate	226	23	10.2%	10.0%
MS/MSD	226	12	5.3%	5.0%
Trip Blank*	42	40	95.2%	100.0%
Bedrock Wells				
Duplicate	24	4	16.7%	10.0%
MS/MSD	24	4	16.7%	5.0%
Trip Blank*	18	18	100.0%	100.0%
Leachate Wells				
Duplicate	9	8	88.9%	10.0%
MS/MSD	9	8	88.9%	5.0%
Trip Blank*	6	6	100.0%	100.0%
Soil Gas				
Duplicate	354	17	4.8%	10.0%

Notes:
* Total samples collected for trip blanks is the number of coolers which contained samples to be analyzed for VOCs.

Table 4-1
Data Qualification Summary
Waste Samples
Sauget Area 2 RI/FS

Flag	Method	680	8081	8151	8260	8270	8280	6010	Sum	Fraction %
	Total	280	588	280	924	1792	700	616		
Flag	RC									
R	c				5				5	0.10%
	h						4		4	0.08%
	l		4		1	6			11	0.21%
	m	1				8			9	0.17%
J	c		40	4	16	1	10		71	1.37%
	d							21	21	0.41%
	f	15		4	1		5	1	26	0.50%
	g		121						121	2.34%
	h				8		135		143	2.76%
	l		9		2	2	20		33	0.64%
	m	13			7			41	61	1.18%
	n	18	14			6	3	16	57	1.10%
	p							4	4	0.08%
	q			15	15		9		39	0.75%
	s			4		40		15	59	1.14%
	w							4	4	0.08%
U	p							3	3	0.06%
	z			10	4		3		17	0.33%
UJ	c		37	17		3	6		63	1.22%
	f		2	1	2		3		8	0.15%
	h				25		85		110	2.12%
	m							4	4	0.08%
	n					7			7	0.14%
	p							13	13	0.25%
	q				48				48	0.93%
	s			5		136			141	2.72%

Flag	Method	680	8081	8151	8260	8270	8280	6010
	Total	280	588	280	924	1792	700	616
Flag	RC							
R	c				0.54%			
	h						0.57%	
	l		0.68%		0.11%	0.33%		
	m	0.36%				0.45%		
J	c		**6.80%**	1.43%	1.73%	0.06%	1.43%	
	d							3.41%
	f	**5.36%**		1.43%	0.11%		0.71%	0.16%
	g		**20.58%**					
	h				0.87%		**19.29%**	
	l		1.53%		0.22%	0.11%	2.86%	
	m	4.64%			0.76%			**6.66%**
	n	**6.43%**	2.38%			0.33%	0.43%	2.60%
	p							0.65%
	q			**5.36%**	1.62%		1.29%	
	s			1.43%		2.23%		2.44%
	w							0.65%
U	p							0.49%
	z			3.57%	0.43%		0.43%	
UJ	c		**6.29%**	**6.07%**		0.17%	0.86%	
	f		0.34%	0.36%	0.22%		0.43%	
	h				2.71%		**12.14%**	
	m							0.65%
	n					0.39%		
	p							2.11%
	q				**5.19%**			
	s			1.79%		**7.59%**		

Table 4-2
Data Qualification Summary
TCLP Samples
Sauget Area 2 RI/FS

	Method	8081	8151	8260	8270	8280	6010	Hg
	Total	638	319	957	1885	700	609	28
Flag	RC							
R	s		16					
J	c	3	14	38			6	
	d							9
	f		3		1		3	
	g	11	7					
	h					9		2
	k						1	
	m						17	
	o						4	
	p						3	
	q			3	4			
	s		11		20		8	
	w						1	
	z			71				
U	o						18	
	p						46	
	z		3		22			
UJ	c	19	10	24				
	h					142		
	p						8	
	r			8	7			
	s	83			43			
	w						4	

Sum	Fraction %
16	0.31%
61	1.19%
9	0.18%
7	0.14%
18	0.35%
11	0.21%
1	0.02%
17	0.33%
4	0.08%
3	0.06%
7	0.14%
39	0.76%
1	0.02%
71	1.38%
18	0.35%
46	0.90%
25	0.49%
53	1.03%
142	2.76%
8	0.16%
15	0.29%
126	2.45%
4	0.08%

	Method	8081	8151	8260	8270	8280	6010	Hg
	Total	638	319	957	1885	700	609	28
Flag	RC							
R	s		**5.02%**					
J	c	0.47%	4.39%	3.97%			0.99%	
	d							**32.14%**
	f		0.94%		0.05%		0.49%	
	g	1.72%	2.19%					
	h					1.29%		**7.14%**
	k						0.16%	
	m						2.79%	
	o						0.66%	
	p						0.49%	
	q			0.31%	0.21%			
	s		3.45%		1.06%		1.31%	
	w						0.16%	
	z			**7.42%**				
U	o						2.96%	
	p						**7.55%**	
	z		0.94%		1.17%			
UJ	c	2.98%	3.13%	2.51%				
	h					**20.29%**		
	p						1.31%	
	r			0.84%	0.37%			
	s	**13.01%**			2.28%			
	w						0.66%	

Table 4-3
Data Qualification Summary
Surface Water Samples
Sauget Area 2 RI/FS

	Method	680	8081	8151	8260	8270	8280	6010	Hg	Hard
	Total	560	1176	560	1848	3591	250	2420	110	5
Flag	RC									
R	c				1					
	s		2							
J	c			2	4		1	1		
	d					1		5		
	g		3	2						
	h				5					
	m				8					
	n					4				
	o							5		
	p							1	5	
	r				6					
	s		4	6				18		
	w							45		
	x									4
U	o							138		
	p							121		
	x							19		
	y				33					
	z				6					
UJ	c		24	37	14	5	6	7		
	h	100			28					
	m							3		
	n					38				
	o							68		
	p							92	7	
	r				164	91				
	s		236							
	w							8		

Sum	Fraction %
1	0.01%
2	0.02%
8	0.08%
6	0.06%
5	0.05%
5	0.05%
8	0.08%
4	0.04%
5	0.05%
6	0.06%
6	0.06%
28	0.27%
45	0.43%
4	0.04%
138	1.31%
121	1.15%
19	0.18%
33	0.31%
6	0.06%
93	0.88%
128	1.22%
3	0.03%
38	0.36%
68	0.65%
99	0.94%
255	2.42%
236	2.24%
8	0.08%

	Method	680	8081	8151	8260	8270	8280	6010	Hg	Hard
	Total	560	1176	560	1848	3591	250	2420	110	5
Flag	RC									
R	c				0.05%					
	s		0.17%							
J	c			0.36%	0.22%		0.40%	0.04%		
	d					0.03%		0.21%		
	g		0.26%	0.36%						
	h				0.27%					
	m				0.43%					
	n					0.11%				
	o							0.21%		
	p							0.04%	4.55%	
	r				0.32%					
	s		0.34%	1.07%				0.74%		
	w							1.86%		
	x									**80.00%**
U	o							**5.70%**		
	p							5.00%		
	x							0.79%		
	y				1.79%					
	z				0.32%					
UJ	c		2.04%	**6.61%**	0.76%	0.14%	2.40%	0.29%		
	h	**17.86%**			1.52%					
	m							0.12%		
	n					1.06%				
	o							2.81%		
	p							3.80%	**6.36%**	
	r				**8.87%**	2.53%				
	s		**20.07%**							
	w							0.33%		

Table 4-4
Data Qualification Summary
Stormwater Samples
Sauget Area 2 RI/FS

	Method	8081	8151	8260	8270	8290	6010
	Total	126	60	198	384	150	132
Flag	RC						
R	s	15					
J	c	4	7	3	3		
	g	2	4				
	o						1
	p						3
	s	12					
U	o						3
	y			3			
UJ	c		3		6	30	
	o						1
	p						2
	r				3		
	s	76					

Sum	Fraction %
15	1.43%
17	1.62%
6	0.57%
1	0.10%
3	0.29%
12	1.14%
3	0.29%
3	0.29%
39	3.71%
1	0.10%
2	0.19%
3	0.29%
76	**7.24%**

	Method	8081	8151	8260	8270	8290	6010
	Total	126	60	198	384	150	132
Flag	RC						
R	s	**11.90%**					
J	c	3.17%	**11.67%**	1.52%	0.78%		
	g	1.59%	**6.67%**				
	o						0.76%
	p						2.27%
	s	**9.52%**					
U	o						2.27%
	y			1.52%			
UJ	c		5.00%		1.56%	**20.00%**	
	o						0.76%
	p						1.52%
	r				0.78%		
	s	**60.32%**					

Table 4-5
Data Qualification Summary
Soil Samples
Sauget Area 2 RI/FS

	Method	680	8081	8151	8260	8270	8280	6010	Hg	Sum	Fraction %
	Total	760	1596	760	2475	4864	1900	1672	76		
Flag	RC										
R	c				5					5	0.04%
	h						7			7	0.05%
	l		13							13	0.09%
	m	1								1	0.01%
	q					64				64	0.45%
	s		16							16	0.11%
J	c		91	55	13	1	6	1		167	1.18%
	d							46	7	53	0.38%
	f	15	9	2	40	14	38	18	13	149	1.06%
	g		168	60						228	1.62%
	h			4	8	14	126			152	1.08%
	k							14	6	20	0.14%
	l		9	5	5		7			26	0.18%
	m	14	4				3	206	2	229	1.62%
	n	18	3		16	4		12		53	0.38%
	o							1		1	0.01%
	p							8		8	0.06%
	q						21			21	0.15%
	r				1					1	0.01%
	s		21	7	6	67		82		183	1.30%
	w							11		11	0.08%
	z		7				13			20	0.14%
U	o							8		8	0.06%
	p							29		29	0.21%
	y				1					1	0.01%
	z			16	31	10				57	0.40%
UJ	c		113	16	13	3	41			186	1.32%
	f		6	8			43		1	58	0.41%
	h			16	26	61	188			291	2.06%
	m		2					21		23	0.16%
	n				42	5	2	3		52	0.37%
	p							16		16	0.11%
	r				14	29				43	0.30%
	s	8	58	18	59	254				397	2.82%
	w							4		4	0.03%

	Method	680	8081	8151	8260	8270	8280	6010	Hg
	Total	760	1596	760	2475	4864	1900	1672	76
Flag	RC								
R	c				0.20%				
	h						0.37%		
	l		0.81%						
	m	0.13%							
	q					1.32%			
	s		1.00%						
J	c		**5.70%**	**7.24%**	0.53%	0.02%	0.32%	0.06%	
	d							2.75%	**9.21%**
	f	1.97%	0.56%	0.26%	1.62%	0.29%	2.00%	1.08%	**17.11%**
	g		**10.53%**	**7.89%**					
	h			0.53%	0.32%	0.29%	**6.63%**		
	k							0.84%	**7.89%**
	l		0.56%	0.66%	0.20%		0.37%		
	m	1.84%	0.25%				0.16%	**12.32%**	2.63%
	n	2.37%	0.19%		0.65%	0.08%		0.72%	
	o							0.06%	
	p							0.48%	
	q						1.11%		
	r				0.04%				
	s		1.32%	0.92%	0.24%	1.38%		4.90%	
	w							0.66%	
	z		0.44%				0.68%		
U	o							0.48%	
	p							1.73%	
	y				0.04%				
	z			2.11%	1.25%	0.21%			
UJ	c		**7.08%**	2.11%	0.53%	0.06%	2.16%		
	f		0.38%	1.05%			2.26%		1.32%
	h			2.11%	1.05%	1.25%	**9.89%**		
	m		0.13%					1.26%	
	n				1.70%	0.10%	0.11%	0.18%	
	p							0.96%	
	r				0.57%	0.60%			
	s	1.05%	3.63%	2.37%	2.38%	**5.22%**			
	w							0.24%	

Table 4-6
Data Qualification Summary
Seep Samples
Sauget Area 2 RI/FS

	Method	8081	8151	8260	8270	8280	6010	Sum	Fraction %		Method	8081	8151	8260	8270	8280	6010
	Total	63	30	99	387	75	66				Total	63	30	99	387	75	66
Flag	RC									Flag	RC						
J	c		1	1	1			3	0.42%	J	c		3.33%	1.01%	0.26%		
	g	5						5	0.69%		g	**7.94%**					
	n	1						1	0.14%		n	1.59%					
	r							0	0.00%		r						
	s	1	1			3	1	6	0.83%		s	1.59%	3.33%			4.00%	1.52%
U	o						1	1	0.14%	U	o						1.52%
	p						1	1	0.14%		p						1.52%
	y			1				1	0.14%		y			1.01%			
UJ	r			3				3	0.42%	UJ	r			3.03%			
	s	42						42	**5.83%**		s	**66.67%**					

Table 4-7
Data Qualification Summary
Sediment Samples
Sauget Area 2 RI/FS

Flag	Method	680	8081	8151	8260	8270	8290	6010	Sum	Fraction %
	Total	540	1134	540	1782	3463	250	1188		
Flag	RC									
R	b		2						2	0.02%
	c		5						5	0.06%
	l			127					127	1.43%
	n					64			64	0.72%
	s					50			50	0.56%
J	c			2	34	3	5		44	0.49%
	d	5			7			12	24	0.27%
	f				2				2	0.02%
	g			10					10	0.11%
	l			13					13	0.15%
	m		7				2	47	56	0.63%
	n				1				1	0.01%
	o							1	1	0.01%
	p							13	13	0.15%
	q				2				2	0.02%
	s		37				25	31	93	1.05%
	w							15	15	0.17%
U	o							10	10	0.11%
	p							59	59	0.66%
	x				16			2	18	0.20%
	y				20				20	0.22%
	z				6	9			15	0.17%
UJ	c		79	22	20	13	3		137	1.54%
	d				1	13			14	0.16%
	f				5				5	0.06%
	m	3	10					2	15	0.17%
	n				5	133			138	1.55%
	o							3	3	0.03%
	p							71	71	0.80%
	r		1		42	46			89	1.00%
	s		165			101	4		270	3.03%

Flag	Method	680	8081	8151	8260	8270	8290	6010
	Total	540	1134	540	1782	3463	250	1188
Flag	RC							
R	b		0.18%					
	c		0.44%					
	l			**23.52%**				
	n					1.85%		
	s					1.44%		
J	c			0.37%	1.91%	0.09%	2.00%	
	d	0.93%			0.39%			1.01%
	f				0.11%			
	g			1.85%				
	l			2.41%				
	m		0.62%				0.80%	3.96%
	n				0.06%			
	o							0.08%
	p							1.09%
	q				0.11%			
	s		3.26%				**10.00%**	2.61%
	w							1.26%
U	o							0.84%
	p							4.97%
	x				0.90%			0.17%
	y				1.12%			
	z				0.34%	0.26%		
UJ	c		**6.97%**	4.07%	1.12%	0.38%	1.20%	
	d				0.06%	0.38%		
	f				0.28%			
	m	0.56%	0.88%					0.17%
	n				0.28%	3.84%		
	o							0.25%
	p							**5.98%**
	r		0.09%		2.36%	1.33%		
	s		**14.55%**			2.92%	1.60%	

Table 4-8
Data Qualification Summary
Leachate Samples
Sauget Area 2 RI/FS

Flag	Method	680	8081	8151	8260	8270	8280	8290	6010	Hg	Sum	Fraction %
	Total	130	273	130	429	840	125	200	157	13		
Flag	RC											
R	c				2						2	0.09%
	l		1		1	1					3	0.13%
	m	4				27					31	1.35%
J	c		4	4	13			14			35	1.52%
	d				2				2	1	5	0.22%
	f	20				28	37		4		89	3.87%
	g		9	8							17	0.74%
	l				1						1	0.04%
	m	13			3	8		7	10	3	44	1.92%
	n		1						3		4	0.17%
	o								1		1	0.04%
	q			3		9	3				15	0.65%
	r				2	1					3	0.13%
	s							4	2		6	0.26%
U	o								1		1	0.04%
	p								2		2	0.09%
	z			3	1						4	0.17%
UJ	b										0	0.00%
	c		16	5	14	1		20			56	2.44%
	d							1			1	0.04%
	f	10				3					13	0.57%
	m						1				1	0.04%
	o									5	5	0.22%
	r				4						4	0.17%

Flag	Method	680	8081	8151	8260	8270	8280	8290	6010	Hg
	Total	130	273	130	429	840	125	200	157	13
Flag	RC									
R	c				0.47%					
	l		0.37%		0.23%	0.12%				
	m	3.08%				3.21%				
J	c		1.47%	3.08%	3.03%			**7.00%**		
	d				0.47%				1.27%	**7.69%**
	f	**15.38%**				3.33%	**29.60%**		2.55%	
	g		3.30%	**6.15%**						
	l				0.23%					
	m	**10.00%**			0.70%	0.95%		3.50%	**6.37%**	**23.08%**
	n		0.37%						1.91%	
	o								0.64%	
	q			2.31%		1.07%	2.40%			
	r				0.47%	0.12%				
	s							2.00%	1.27%	
U	o								0.64%	
	p								1.27%	
	z			2.31%	0.23%					
UJ	b									
	c		**5.86%**	3.85%	3.26%	0.12%		**10.00%**		
	d							0.50%		
	f	**7.69%**				0.36%				
	m						0.80%			
	o									**38.46%**
	r				0.93%					

Table 4-9
Data Qualification Summary
Groundwater Samples
Sauget Area 2 RI/FS

	Method	680	8081	8151	8260	8270	8290	6010	Hg	CO2	NO3	Sum	Fraction %
	Total	1170	2457	1170	9141	20316	1375	3410	155	96	117		
Flag	RC												
R	c				57	3						60	0.15%
	l		12	18	9	34						73	0.19%
	m	3	4			41						48	0.12%
	p			1								1	0.00%
	s		117			115						232	0.59%
J	c		16	20	31	7		1				75	0.19%
	d					1			2			3	0.01%
	f				1	5		10	2	7		25	0.06%
	g		41	26								67	0.17%
	h			1		1						2	0.01%
	l		1	6		6						13	0.03%
	m							76			3	79	0.20%
	n					3		2				5	0.01%
	o							9	1			10	0.03%
	p							11				11	0.03%
	r				1	1						2	0.01%
	s		62	3		22		37				124	0.31%
	w							4				4	0.01%
U	o							114				114	0.29%
	p							90				90	0.23%
	x				7			11				18	0.05%
	y				86							86	0.22%
	z			29	61	43						133	0.34%
UJ	b											0	0.00%
	c		73	75	54	11	57	6				276	0.70%
	f								3			3	0.01%
	h					64						64	0.16%
	l						2					2	0.01%
	m	1		4	7						20	32	0.08%
	n					23						23	0.06%
	o							36	11		2	49	0.12%
	p							72	1			73	0.19%
	r				94	119						213	0.54%
	s		1000			105						1105	2.80%
	w							2				2	0.01%

	Method	680	8081	8151	8260	8270	8290	6010	Hg	CO2	NO3
	Total	1170	2457	1170	9141	20316	1375	3410	155	96	117
Flag	RC										
R	c				0.62%	0.01%					
	l		0.49%	1.54%	0.10%	0.17%					
	m	0.26%	0.16%			0.20%					
	p			0.09%							
	s		4.76%			0.57%					
J	c		0.65%	1.71%	0.34%	0.03%		0.03%			
	d					0.00%			1.29%		
	f				0.01%	0.02%		0.29%	1.29%	**7.29%**	
	g		1.67%	2.22%							
	h			0.09%		0.00%					
	l		0.04%	0.51%		0.03%					
	m							2.23%			2.56%
	n					0.01%		0.06%			
	o							0.26%	0.65%		
	p							0.32%			
	r				0.01%	0.00%					
	s		2.52%	0.26%		0.11%		1.09%			
	w							0.12%			
U	o							3.34%			
	p							2.64%			
	x				0.08%			0.32%			
	y				0.94%						
	z			2.48%	0.67%	0.21%					
UJ	b										
	c		2.97%	**6.41%**	0.59%	0.05%	4.15%	0.18%			
	f								1.94%		
	h					0.32%					
	l						0.15%				
	m	0.09%		0.34%	0.08%						**17.09%**
	n					0.11%					
	o							1.06%	**7.10%**		1.71%
	p							2.11%	0.65%		
	r				1.03%	0.59%					
	s		**40.70%**			0.52%					
	w							0.06%			

Table 4-10
Data Qualification Summary
Biota Samples
Sauget Area 2 RI/FS

	Method	8081	8151	8270	8290	6010	Hg
	Total	2562	1220	7858	3142	2675	124
Flag	RC						
R	l			18			
	m						
	s		7				
J	c	38	25	1	20		
	g	104	67				
	h	30	4				
	l	26	2	1			
	m					137	32
	n	6			4		
	o					1	10
	p					17	8
	q	7			2		
	s		36			84	
	w				1	30	
U	o					50	
	p					48	
	z	19		15			
UJ	c	70	6	2	118		
	h	177					
	l			72			
	m						2
	n				73		
	o					4	1
	p					34	
	r			24			
	s			376			
	w					6	

Sum	Fraction %
18	0.10%
0	0.00%
7	0.04%
84	0.48%
171	0.97%
34	0.19%
29	0.16%
169	0.96%
10	0.06%
11	0.06%
25	0.14%
9	0.05%
120	0.68%
31	0.18%
50	0.28%
48	0.27%
34	0.19%
196	1.11%
177	1.01%
72	0.41%
2	0.01%
73	0.42%
5	0.03%
34	0.19%
24	0.14%
376	2.14%
6	0.03%

	Method	8081	8151	8270	8290	6010	Hg
	Total	2562	1220	7858	3142	2675	124
Flag	RC						
R	l			0.23%			
	m						
	s		0.57%				
J	c	1.48%	2.05%	0.01%	0.64%		
	g	4.06%	**5.49%**				
	h	1.17%	0.33%				
	l	1.01%	0.16%	0.01%			
	m					**5.12%**	**25.81%**
	n	0.23%			0.13%		
	o					0.04%	**8.06%**
	p					0.64%	**6.45%**
		0.27%			0.06%		
	s		2.95%			3.14%	
	w				0.03%	1.12%	
U	o					1.87%	
	p					1.79%	
	z	0.74%		0.19%			
UJ	c	2.73%	0.49%	0.03%	3.76%		
	h	**6.91%**					
	l			0.92%			
	m						1.61%
	n				2.32%		
	o					0.15%	0.81%
	p					1.27%	
	r			0.31%			
	s			4.78%			
	w					0.22%	

Table 4-11
Data Qualification Summary
Air Samples
Sauget Area 2 RI/FS

	Method	8081	8260	8270	8290	6010
	Total	378	576	288	450	348
Flag	RC					
R	l	45	44			
	s			83		
J	c	11	17		2	
	f		14			
	g	6				
	l		12	26		
	s	1		24		
	w		3			
U	x					4
	z	1	9			
UJ	c	33			4	
	l	9		85		
	s	63		53		

Sum	Fraction %
89	4.36%
83	4.07%
30	1.47%
14	0.69%
6	0.29%
38	1.86%
25	1.23%
3	0.15%
4	0.20%
10	0.49%
37	1.81%
94	4.61%
116	**5.69%**

	Method	8081	8260	8270	8290	6010
	Total	378	576	288	450	348
Flag	RC					
R	l	**11.90%**	**7.64%**			
	s			**28.82%**		
J	c	2.91%	2.95%		0.44%	
	f		2.43%			
	g	1.59%				
	l		2.08%	**9.03%**		
	s	0.26%		**8.33%**		
	w		0.52%			
U	x					1.15%
	z	0.26%	1.56%			
UJ	c	**8.73%**			0.89%	
	l	2.38%		**29.51%**		
	s	**16.67%**		**18.40%**		

Table 4-12
Data Qualifying Codes
Sauget Area 2 RI/FS

Flag	Interpretation
R	The datum is unusable due to serious quality control failures.
U	The datum should be considered a non-detect at the value reported due to blank contamination.
J	The datum should be considered an estimated value, more highly biased or variable than normal.
UJ	The datum should be considered a non-detect, however, the detection limit may be inaccurate.
X	The datum is affected by a special circumstance explained at the bottom of the data report.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

Notes:
Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the USEPA National Functional Guidelines for Data Review.

Table 4-13
Reason Codes
Sauget Area 2 RI/FS

GC/MS Organics		GC and HPLC Organics		Inorganics and Conventionals	
Code	**Interpretation**	**Code**	**Interpretation**	**Code**	**Interpretation**
a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence	a	Incorrect or incomplete analytical sequence
c	Calibration failure; poor (RRF) or unstable (%D) response	b	Instrument performance failure or poor chromatography	c	Calibration failure
d	MS/MSD or LCS/LCSD RPD imprecision	c	Calibration failure; poor or unstable (%D) response	d	MS/MSD or LCS/LCSD RPD imprecision
e	Sample preservation or cooler temperature failure	d	MS/MSD or LCS/LCSD RPD imprecision	e	Sample preservation or cooler temperature failure
f	Field duplicate imprecision	e	Sample preservation or cooler temperature failure	f	Field duplicate imprecision
h	Holding time violation	f	Field duplicate imprecision	h	Holding time violation
j	Tuning Failure or poor mass spectrometer performance	g	Dual column confirmation imprecision	k	Laboratory duplicate imprecision
l	LCS recovery failure	h	Holding time violation	l	LCS recovery failure
m	MS/MSD recovery failure	l	LCS recovery failure	m	MS/MSD recovery failure
n	Internal standard failure	m	MS/MSD recovery failure	n	ICP interference check sample failure
p	Air bubble (> 6 mm or ¼ inch) in VOC vials	p	Air bubble (> 6 mm or ¼ inch) in VOC vials	o	Calibration blank contamination
q	Concentration exceeded the linear range	q	Concentration exceeded the linear range	p	Preparation blank contamination
r	linearity (%RSD or r) failure in initial calibration	r	linearity (%RSD or r) failure in initial calibration	q	Concentration exceeded the linear range
s	Surrogate failure	s	Surrogate failure	r	Linearity failure in calibration or MSA
t	Tentatively identified Compound	u	No confirmation column	s	Serial dilution failure
w	Identification criteria failure	w	Identification criteria failure	v	Post-digestion spike failure
x	Field and/or equipment blank contamination	x	Field and/or equipment blank contamination	w	CRDL standard recovery failure
y	Trip blank contamination	y	Trip blank contamination	x	Field and/or equipment blank contamination
z	Method blank and/or storage blank contamination	z	Method blank and/or storage blank contamination	z	Laboratory storage blank contamination
Q	Other – see bottom of data report for explanation	Q	Other – see bottom of data report for explanation	Q	Other - see bottom of data report for explanation

Notes:
The other type of code used by URS is a Reason Code. The reason code indicates the type of quality control failure that lead to the application of the data validation flag.

Table 5-1a
Soil Gas Results
Site O
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-O-1	06/19/02	13	
SG-O-2	06/20/02	ND	
SG-O-3	06/17/02	ND	
SG-O-4	06/19/02	6641	
SG-O-4DUP	06/19/02	6891	
SG-O-5	06/20/02	ND	3
SG-O-6	06/17/02	ND	
SG-O-7	06/17/02	ND	
SG-O-8	06/19/02	687	
SG-O-9	06/20/02	ND	2.5
SG-O-10	06/17/02	ND	
SG-O-11	06/17/02	43	
SG-O-12	06/17/02	43	
SG-O-13	06/20/02	ND	
SG-O-14	06/20/02	ND	
SG-O-16	06/17/02	373	
SG-O-17	06/17/02	5576	
SG-O-18	06/17/02	22	
SG-O-19	06/20/02	ND	
SG-O-20	06/20/02	ND	
SG-O-22	06/18/02	ND	
SG-O-22DUP	06/18/02	ND	
SG-O-23	06/17/02	ND	
SG-O-23DUP	06/17/02	ND	
SG-O-24	06/17/02	ND	
SG-O-24	06/19/02	ND	
SG-O-25	06/20/02	11	
SG-O-26	06/20/02	ND	
SG-O-27	06/20/02	ND	2
SG-O-28	06/18/02	2907	
SG-O-29	06/18/02	ND	
SG-O-30	06/18/02	ND	
SG-O-31	06/20/02	BMDL	
SG-O-32	06/20/02	ND	
SG-O-34	06/18/02	144	
SG-O-35	06/18/02	ND	
SG-O-36	06/18/02	ND	
SG-O-37	06/20/02	57	
SG-O-38	06/20/02	ND	
SG-O-39	06/19/02	47	
SG-O-40	06/19/02	490	
SG-O-41	06/19/02	ND	
SG-O-42	06/20/02	5	
SG-O-43	06/20/02	8	
SG-O-44	06/19/02	ND	
SG-O-45	06/18/02	ND	
SG-O-46	06/18/02	ND	
SG-O-47	06/19/02	ND	3.5
SG-O-48	06/19/02	ND	4
SG-O-49	06/19/02	ND	4
SG-O-50	06/24/02	ND	
SG-O-55	06/24/02	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1b
Soil Gas Results
Site P
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-P-5	06/17/02	ND	
SG-P-6	06/17/02	ND	
SG-P-7	06/17/02	ND	
SG-P-8	06/17/02	ND	
SG-P-9	06/17/02	ND	
SG-P-10	06/17/02	ND	
SG-P-11	06/17/02	ND	
SG-P-12	06/17/02	31.017	
SG-P-14	06/17/02	17.194	
SG-P-16	06/17/02	109.292	
SG-P-16DUP	06/17/02	81.001	
SG-P-17	06/17/02	ND	
SG-P-18	06/18/02	ND	
SG-P-19	06/18/02	19.392	
SG-P-20	06/18/02	ND	
SG-P-21	06/18/02	ND	
SG-P-22	06/18/02	ND	
SG-P-23	06/18/02	90.55	
SG-P-24	06/18/02	51.594	
SG-P-24DUP	06/18/02	39.257	
SG-P-25	06/19/02	ND	
SG-P-26	06/18/02	ND	
SG-P-27	06/19/02	6	
SG-P-28	06/18/02	546.931	
SG-P-29	06/19/02	ND	
SG-P-31	06/19/02	5	
SG-P-32	06/19/02	ND	
SG-P-33	06/19/02	ND	
SG-P-34	06/18/02	183.811	
SG-P-37	06/24/02	ND	4
SG-P-38	06/24/02	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1c
Soil Gas Results
Site Q
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-Q-1	Nov-01	ND	
SG-Q-2	Nov-01	ND	
SG-Q-3	Nov-01	ND	
SG-Q-4	Nov-01	ND	
SG-Q-5	Nov-01	ND	
SG-Q-6	Nov-01	59.81	
SG-Q-7	Nov-01	18.35	4
SG-Q-8	Nov-01	21.73	
SG-Q-9	Nov-01	ND	
SG-Q-10	Nov-01	5.23	
SG-Q-11	Nov-01	36.31	
SG-Q-12	Nov-01	9.69	
SG-Q-13	Nov-01	17.06	
SG-Q-14	Nov-01	8.32	
SG-Q-15	Nov-01	4.36	
SG-Q-16	Nov-01	23.60	
SG-Q-17	Nov-01	11.57	
SG-Q-18	Nov-01	ND	
SG-Q-19	Nov-01	ND	
SG-Q-20	Nov-01	ND	4
SG-Q-21	Nov-01	ND	
SG-Q-22	Nov-01	2.34	
SG-Q-23	Nov-01	ND	
SG-Q-24	Nov-01	ND	
SG-Q-25	Nov-01	ND	
SG-Q-26	Nov-01	ND	
SG-Q-27	Nov-01	ND	
SG-Q-28	Nov-01	ND	
SG-Q-29	Nov-01	NA	
SG-Q-30	Nov-01	ND	3
SG-Q-31	Nov-01	ND	
SG-Q-32	Nov-01	14.38	
SG-Q-32-DUP	Nov-01	14.27	
SG-Q-33	Nov-01	ND	
SG-Q-34	Nov-01	ND	
SG-Q-35	Nov-01	ND	
SG-Q-36	Nov-01	ND	
SG-Q-37	Nov-01	ND	3
SG-Q-38	Nov-01	ND	4
SG-Q-39	Nov-01	ND	
SG-Q-40	Nov-01	6.58	
SG-Q-41	Nov-01	ND	
SG-Q-42	Nov-01	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1c
Soil Gas Results
Site Q
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-Q-43	Nov-01	1.04	
SG-Q-44	Nov-01	2.71	4
SG-Q-45	Nov-01	ND	
SG-Q-46	Nov-01	ND	
SG-Q-47	Nov-01	ND	4
SG-Q-48	Nov-01	5.20	
SG-Q-49	Nov-01	ND	
SG-Q-50	Nov-01	7.35	
SG-Q-51	Nov-01	ND	
SG-Q-52	Nov-01	ND	4
SG-Q-53	Nov-01	ND	
SG-Q-54	Nov-01	ND	
SG-Q-55	Nov-01	8.53	
SG-Q-56	Nov-01	ND	
SG-Q-57	Nov-01	ND	
SG-Q-58	Nov-01	17.63	
SG-Q-59	Nov-01	ND	
SG-Q-60	Nov-01	6.56	
SG-Q-61	Nov-01	3.54	
SG-Q-62	Nov-01	ND	
SG-Q-63	Nov-01	ND	
SG-Q-64	Nov-01	1.91	
SG-Q-65	Nov-01	ND	
SG-Q-66	Nov-01	ND	
SG-Q-67	Nov-01	5.26	
SG-Q-68	Nov-01	ND	
SG-Q-69	Nov-01	ND	
SG-Q-70	Nov-01	2.50	
SG-Q-71	Nov-01	ND	
SG-Q-72	Nov-01	4.24	
SG-Q-72-DUP	Nov-01	2.04	
SG-Q-73	Nov-01	ND	
SG-Q-74	Nov-01	ND	
SG-Q-75	Nov-01	ND	
SG-Q-76	Nov-01	ND	
SG-Q-77	Nov-01	ND	3.5
SG-Q-78	Nov-01	40.96	
SG-Q-79	Nov-01	3.10	
SG-Q-80	Nov-01	ND	
SG-Q-81	Nov-01	ND	
SG-Q-82	Nov-01	8.52	
SG-Q-83	Nov-01	13.32	3.5
SG-Q-84	Nov-01	2.24	2.5
SG-Q-85	Nov-01	ND	
SG-Q-86	Nov-01	ND	
SG-Q-87	Nov-01	NA	
SG-Q-88	Nov-01	25.98	
SG-Q-89	Nov-01	ND	3
SG-Q-90	Nov-01	8.11	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1c
Soil Gas Results
Site Q
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-Q-91	Nov-01	ND	
SG-Q-92	Nov-01	ND	
SG-Q-93	Nov-01	ND	
SG-Q-94	Nov-01	6.27	4.5
SG-Q-95	Nov-01	ND	4.5
SG-Q-96	Nov-01	38.92	
SG-Q-97	Nov-01	59.17	
SG-Q-98	Nov-01	ND	
SG-Q-99	Nov-01	ND	
SG-Q-100	Nov-01	2.84	
SG-Q-101	Nov-01	10.47	
SG-Q-102	Nov-01	33.69	
SG-Q-103	Nov-01	ND	3
SG-Q-104	Nov-01	NA	
SG-Q-105	Nov-01	3.89	4
SG-Q-106	Nov-01	1.72	
SG-Q-107	Nov-01	ND	
SG-Q-108	Nov-01	11.25	
SG-Q-109	Nov-01	ND	
SG-Q-110	Nov-01	NA	
SG-Q-111	Nov-01	1.09	
SG-Q-112	Nov-01	ND	
SG-Q-113	Nov-01	2.37	
SG-Q-114	Nov-01	22.28	
SG-Q-115	Nov-01	ND	
SG-Q-116	Nov-01	ND	
SG-Q-117	Nov-01	NA	
SG-Q-118	Nov-01	ND	
SG-Q-119	Nov-01	ND	
SG-Q-120	Nov-01	2.40	
SG-Q-121	Nov-01	42.69	
SG-Q-122	Nov-01	ND	
SG-Q-123	Nov-01	ND	
SG-Q-124	Nov-01	NA	
SG-Q-125	Nov-01	ND	
SG-Q-126	Nov-01	NA	
SG-Q-127	Nov-01	ND	
SG-Q-128	Nov-01	13.34	
SG-Q-129	Nov-01	NA	
SG-Q-130	Nov-01	ND	
SG-Q-131	Nov-01	ND	
SG-Q-132	Nov-01	ND	
SG-Q-133	Nov-01	6.68	
SG-Q-134	Nov-01	ND	
SG-Q-135	Nov-01	2.15	
SG-Q-135-DUP	Nov-01	1.85	
SG-Q-136	Nov-01	ND	
SG-Q-137	Nov-01	NA	
SG-Q-138	Nov-01	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1c
Soil Gas Results
Site Q
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-Q-139	Nov-01	ND	
SG-Q-140	Nov-01	ND	
SG-Q-140-DUP	Nov-01	ND	
SG-Q-141	Nov-01	NA	
SG-Q-142	Nov-01	NA	
SG-Q-143	Nov-01	ND	
SG-Q-144	Nov-01	2.50	4
SG-Q-145	Nov-01	ND	
SG-Q-146	Nov-01	NA	
SG-Q-147	Nov-01	NA	
SG-Q-148	Nov-01	ND	
SG-Q-149	Nov-01	6.53	
SG-Q-150	Nov-01	ND	3
SG-Q-151	Nov-01	ND	4
SG-Q-152	Nov-01	NA	
SG-Q-153	Nov-01	NA	
SG-Q-154	Nov-01	NA	
SG-Q-155	Nov-01	ND	
SG-Q-156	Nov-01	ND	
SG-Q-157	Nov-01	ND	4
SG-Q-158	Nov-01	ND	
SG-Q-159	Nov-01	NA	
SG-Q-160	Nov-01	NA	
SG-Q-161	Nov-01	NA	
SG-Q-162	Nov-01	NA	
SG-Q-163	Nov-01	ND	
SG-Q-164	Nov-01	ND	
SG-Q-165	Nov-01	ND	
SG-Q-166	Nov-01	ND	
SG-Q-167	Nov-01	NA	
SG-Q-168	Nov-01	NA	
SG-Q-169	Nov-01	NA	
SG-Q-170	Nov-01	NA	
SG-Q-171	Nov-01	NA	
SG-Q-172	Nov-01	ND	
SG-Q-173	Nov-01	31.58	
SG-Q-174	Nov-01	ND	
SG-Q-174-DUP	Nov-01	ND	
SG-Q-175	Nov-01	5.30	
SG-Q-176	Nov-01	ND	
SG-Q-176-DUP	Nov-01	ND	
SG-Q-177	Nov-01	NA	
SG-Q-178	Nov-01	NA	
SG-Q-179	Nov-01	NA	
SG-Q-180	Nov-01	NA	
SG-Q-181	Nov-01	NA	
SG-Q-182	Nov-01	NA	
SG-Q-183	Nov-01	ND	
SG-Q-184	Nov-01	28.86	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1c
Soil Gas Results
Site Q
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-Q-185	Nov-01	ND	3.5
SG-Q-186	Nov-01	ND	
SG-Q-187	Nov-01	2.65	
SG-Q-188	Nov-01	NA	
SG-Q-189	Nov-01	NA	
SG-Q-190	Nov-01	NA	
SG-Q-191	Nov-01	NA	
SG-Q-192	Nov-01	NA	
SG-Q-193	Nov-01	NA	
SG-Q-194	Nov-01	ND	
SG-Q-195	Nov-01	8.77	
SG-Q-196	Nov-01	ND	3.5
SG-Q-197	Nov-01	ND	3
SG-Q-198	Nov-01	105.95	
SG-Q-199	Nov-01	NA	
SG-Q-200	Nov-01	NA	
SG-Q-201	Nov-01	NA	
SG-Q-202	Nov-01	NA	
SG-Q-203	Nov-01	NA	
SG-Q-204	Nov-01	ND	3
SG-Q-205	Nov-01	113.19	
SG-Q-206	Nov-01	45.80	3
SG-Q-207	Nov-01	ND	3.5
SG-Q-208	Nov-01	7.55	
SG-Q-209	Nov-01	NA	
SG-Q-210	Nov-01	NA	
SG-Q-211	Nov-01	ND	3.5
SG-Q-212	Nov-01	NA	
SG-Q-213	Nov-01	8.12	
SG-Q-214	Nov-01	21.66	2.5
SG-Q-215	Nov-01	ND	1.5
SG-Q-216	Nov-01	ND	
SG-Q-217	Nov-01	ND	
SG-Q-218	Nov-01	77.75	3
SG-Q-219	Nov-01	1.00	
SG-Q-220	Nov-01	4.23	1.5
SG-Q-221	Nov-01	NA	
SG-Q-222	Nov-01	ND	
SG-Q-223	Nov-01	70.03	
SG-Q-224	Nov-01	ND	
SG-Q-225	Nov-01	ND	
SG-Q-226	Nov-01	3.17	
SG-Q-227	Nov-01	ND	
SG-Q-228	Nov-01	ND	
SG-Q-229	Nov-01	ND	
SG-Q-230	Nov-01	ND	
SG-Q-231	Nov-01	ND	
SG-Q-232	Nov-01	ND	
SG-Q-232-DUP	Nov-01	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1d
Soil Gas Results
Site R
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-R-1	06/21/02	84	
SG-R-2	06/21/02	ND	
SG-R-3	06/21/02	ND	
SG-R-4	06/21/02	ND	
SG-R-5	06/21/02	ND	
SG-R-6	06/21/02	ND	
SG-R-7	06/21/02	ND	
SG-R-8	06/21/02	126	
SG-R-9	06/21/02	ND	
SG-R-10	06/21/02	80	
SG-R-11	06/21/02	3215	
SG-R-12	06/21/02	ND	
SG-R-13	06/20/02	ND	
SG-R-14	06/20/02	23891	
SG-R-14DUP	06/20/02	26555	
SG-R-15	06/21/02	ND	
SG-R-16	06/21/02	ND	
SG-R-17	06/20/02	ND	
SG-R-17DUP	06/20/02	ND	
SG-R-18	06/20/02	19	
SG-R-19	06/21/02	2501	
SG-R-19DUP	06/21/02	1667	
SG-R-20	06/21/02	25231	
SG-R-21	06/20/02	205	
SG-R-22	06/21/02	ND	
SG-R-23	06/21/02	40	
SG-R-24	06/21/02	ND	
SG-R-25	06/21/02	ND	
SG-R-26	06/21/02	836	
SG-R-27	06/21/02	ND	
SG-R-28	06/21/02	ND	
SG-R-29	06/21/02	ND	
SG-R-30	06/21/02	ND	
SG-R-31	06/21/02	741	
SG-R-32	06/21/02	ND	
SG-R-32DUP	06/21/02	ND	
SG-R-33	06/24/02	ND	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-1e
Soil Gas Results
Site S
Sauget Area 2 RI/FS

Sample ID	Date	VOC (ppb)	Depth (ft) (Other than 5ft)
SG-S-1	06/19/02	54996	
SG-S-1DUP	06/19/02	39240	
SG-S-2	06/19/02	3922.5	
SG-S-3	06/19/02	15748.6	
SG-S-4	06/19/02	2804	
SG-S-5	06/19/02	8492.883	
SG-S-8	06/20/02	ND	
SG-S-11	06/24/02	ND	
SG-S-12	06/19/02	4196	
SG-S-13	06/19/02	2864	
SG-S-14	06/20/02	ND	
SG-S-15	06/20/02	BMDL	

Notes:
Units - Concentrations in parts per billion (ppb)
ND - Non Detect
BMDL - Below Method Detection Limit (DL - 5 ppb)

Table 5-2
Waste Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
O	WASTE-O-1-4FT	5324100					496.75				
	WASTE-O-1-COMP		687420	62670	63000	1618100		1100	180	92	790
	WASTE-O-2-7FT	18484000					1.548				
	WASTE-O-2-COMP		2043	127.2	2010	1286		17	9.6	0.072	47
	WASTE-O-3-9FT	1570300					30.155				
	WASTE-O-3-COMP		307500	13120	ND	107700		24	21	1.5	130
P	WASTE-P-1-15FT	34596					0.331				
	WASTE-P-1-COMP		2660	379	13350.3	26780		7.5	8.4	15	100
	WASTE-P-2-6FT	161740					0.184				
	WASTE-P-2-COMP		89200	201.7	1900	610		68	99	19	1200
	WASTE-P-3-22FT	464920					0.03205				
	WASTE-P-3-COMP		87330	1457	212200	310		270	250	5.6	4700
	WASTE-P-4-17	38400					0.002				
	WASTE-P-4-COMP		12520	1298	154.4	5552		220	130	1.2	410
Q	WASTE-Q-1-5FT	158.49					0.9075				
	WASTE-Q-1-COMP		388830	4746	400000	119200		520	1400	1.1	1800
	WASTE-Q-2-8FT	374550					11.4105				
	WASTE-Q-2-COMP		51930	9704	180000	116022		390	380	15	1800
	WASTE-Q-3-6FT	8.43					0.02835				
	WASTE-Q-3-COMP		22110	419	313	1764		50	200	0.72	220
	WASTE-Q-4-9	63.18					8.361				
	WASTE-Q-4-COMP		6350	70	ND	32.4		81	230	0.56	400
	WASTE-Q-5-8	21.43					0.0515				
	WASTE-Q-5-COMP		30880	106.8	30	10.9		78	340	0.15	270
	WASTE-Q-6-15	14380					10.984				
	WASTE-Q-6-15-DUP	24690					21.69				
	WASTE-Q-6-COMP		77227	410	12000	4130		64	85	2.1	270
	WASTE-Q-6-COMP-		57975	298	8300	13045		55	76	1.5	330
	WASTE-Q-7-9	2075					0.2406				

Table 5-2
Waste Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
Q	WASTE-Q-7-COMP		2489	568	19.3	4347		46	44	1	250
	WASTE-Q-8-7	18349.1					ND				
	WASTE-Q-8-COMP		1944	38.57	1400	ND		26	110	1.8	120
	WASTE-Q-9-8	2.36					1.55922				
	WASTE-Q-9-COMP		9034	1651	830	31800		1000	2300	0.96	6400
	WASTE-Q-10-8	23.48					1.03257				
	WASTE-Q-10-8-DUP	371.7					1.64426				
	WASTE-Q-10-COMP		2506	70.59	1503	498		4600	2600	0.31	2300
	WASTE-Q-10-COMP-		2734	62.86	1003.8	121		2800	1500	0.24	2500
	WASTE-Q-11-8	8807.97					0.8178				
	WASTE-Q-11-COMP		40090	1815.9	470000	ND		660	1100	5.1	3300
	WASTE-Q-12-4	25.36					1.0773				
	WASTE-Q-12-4-DUP	36.8					0.664				
	WASTE-Q-12-COMP		9317	12648.6	63	27716		350	770	0.32	1200
	WASTE-Q-12-COMP-		7165	6064	84	22353.7		500	460	0.69	850
R	WASTE-R-1-19FT	4340900					0.385				
	WASTE-R-1-COMP		586100	700	172200	6072		110	16	0.17	98
	WASTE-R-2-20FT	1080700					12.012				
	WASTE-R-2-COMP		5807000	8280	619000	264500		54	9.9	2.6	100
	WASTE-R-3-22FT	4532200					1.50357				
	WASTE-R-3-COMP		451700	10340	60200	208640		14	18	3000	1000
	WASTE-R-4-24FT	570600					0.7084				
	WASTE-R-4-COMP		291980	110	7290	12160		8.7	12	2	30
S	WASTE-S-1-6FT	16210400					0.9986				
	WASTE-S-1-COMP		104930	2419.8	ND	4590		71	820	0.62	220
	WASTE-S-2-6FT	621790					0.00331				
	WASTE-S-2-COMP		228070	313	15	157		40	470	0.26	130

Table 5-3a
Bedrock and Leachate Analytical Data- September 2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	BDRK-O-1	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
	LEACH-O-1	5130.6	11766	2.99	2287	54.9	0.00068705	0.01	0.0045	0.0012	0.22
P	BDRK-P-1	81.89	15.08	0.0063	52	ND	ND	0.023	0.0036	0.00011	0.063
Q	BDRK-Q-1	2.63	2.36	ND	ND	ND	ND	0.058	0.027	0.00024	0.17
	BDRK-Q-2	ND	ND	ND	ND	ND	ND	0.001	ND	ND	ND
	BDRK-Q-2-DUP	ND	ND	ND	ND	ND	ND	0.00093	ND	ND	ND
	LEACH-Q-1	7345	226510	16.6	97400	1.51	2.924E-06	ND	ND	ND	7.5
	LEACH-Q-1-DUP	7393	231130	16.8	104800	0.297	9.893E-07	ND	ND	ND	7.4
R	BDRK-R-1	89.45	1621.9	ND	4.02	ND	ND	0.019	0.013	0.0002	0.051
	LEACH-R-1	318900	1181100	869	3800	3981.6	0.00314	0.026	ND	0.013	99
S	BDRK-S-1	0.5	ND	ND	ND	ND	ND	ND	ND	0.000073	0.0072

Table 5-3b
Bedrock and Leachate Analytical Data-January 2003
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	BDRK-O-1	ND	ND	ND	ND	ND	ND	0.0015	ND	ND	0.0049
	BDRK-O-1-DUP	ND	ND	ND	0.391	ND	ND	ND	ND	ND	ND
P	BDRK-P-1	5.9	ND	0.037	ND	ND	ND	0.038	0.017	0.00011	0.19
Q	BDRK-Q-1	1	4.6	ND	11.354	ND	0.000000006	0.0019	ND	ND	0.025
	BDRK-Q-2	7.31	ND	ND	ND	ND	ND	ND	ND	0.000085	ND
	LEACH-Q-1	9578.8	237680	17	140000	0.46	0.000000024	ND	ND	ND	8.5
R	BDRK-R-1	25.78	121.2	ND	0.664	ND	ND	0.001	ND	ND	0.0079
	LEACH-R-1	397200	1397840	ND	ND	ND	0.00062726	ND	ND	ND	130
	LEACH-R-1-DUP	386830	1765570	ND	ND	174670	0.00157649	ND	ND	ND	88
S	BDRK-S-1	ND	ND	ND	ND	ND	ND	0.0022	ND	ND	0.0041

Table 5-3c
Bedrock and Leachate Analytical Data-April 2003
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	BDRK-O-1	1.2	ND	ND	10	ND	ND	ND	ND	ND	0.0024
P	BDRK-P-1	15.3	ND	ND	ND	ND	ND	0.012	0.0072	0.000088	0.041
Q	BDRK-Q-1	1.63	1.1	ND	89.084	ND	ND	0.0037	ND	ND	0.0077
	BDRK-Q-1-DUP	0.12	2.2	ND	190.077	ND	ND	ND	ND	ND	0.0043
	BDRK-Q-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0026
	LEACH-Q-1	7985.2	270540	ND	1910	7.9	0.0014718	6.6	2.8	0.0059	19
R	BDRK-R-1	14.56	4.4	ND	0.1	ND	ND	0.0042	ND	ND	0.01
	LEACH-R-1	206734000	9713800	ND	1419130	453400	ND	0.024	0.02	0.0025	56
	LEACH-R-1-DUP	156270000	2033100	ND	944610	13500	ND	0.023	ND	0.0025	51
S	BDRK-S-1	4.77	2.1	ND	66	ND	ND	ND	ND	ND	0.0034

Table 5-3d
Bedrock and Leachate Analytical Data-June 2003
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	BDRK-O-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.017
	BDRK-O-1-DUP	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019
P	BDRK-P-1	2.78	2.88	ND	ND	ND	ND	0.0052	0.0026	ND	0.026
Q	BDRK-Q-1	3.62	2.7	ND	ND	ND	ND	0.023	0.01	0.000086	0.089
	BDRK-Q-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.012
	LEACH-Q-1	6451.4	178579	ND	51890	6.56	0.0002075	0.33	0.27	0.001	20
	LEACH-Q-1-DUP	6523.2	231204.6	ND	61320	13.31	0.00021726	0.66	0.56	0.0028	24
	LEACH-Q-1-DUP-Filtered										
	LEACH-Q-1-Filtered										
R	BDRK-R-1	0.29	5.6	ND	ND	ND	ND	ND	ND	ND	0.016
	LEACH-R-1	300342	757350	1160	15379	14445	0.0000054842	0.3	0.07	0.03	48
	LEACH-R-1-Filtered										
S	BDRK-S-1	0.95	11.09	ND	ND	ND	ND	ND	ND	ND	0.014

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	GW-AA-O-1-16	13.65	12.4	0.1402	0.72	ND	ND	0.0043	0.019	ND	0.065
	GW-AA-O-1-26	14.59	ND								
	GW-AA-O-1-36	35.29	10.9								
	GW-AA-O-1-46	11.22	3.6								
	GW-AA-O-1-46-DUP	11.57	3.1								
	GW-AA-O-1-56	12.9	4.7	0.019	0.18	ND		ND	ND	ND	0.025
	GW-AA-O-1-66	11.45	1.2								
	GW-AA-O-1-76	188.41	9.9				ND				
	GW-AA-O-1-86	623.8	22.6								
	GW-AA-O-1-96	1500	84.1	ND	ND	ND		0.071	0.02	0.00008	0.11
	GW-AA-O-1-106	1309.6	122.1								
	GW-AA-O-1-116	900	101.7								
	GW-AA-O-1-120	404.3	32.9	0.065	ND	0.09	ND	ND	ND	ND	0.019
	GW-AA-O-2-13	1.04	ND	ND	ND	ND		ND	ND	ND	0.011
	GW-AA-O-2-23	ND	1.5								
	GW-AA-O-2-33	2.07	ND								
	GW-AA-O-2-43	ND	ND								
	GW-AA-O-2-53	17.51	2.6	0.1604	1.479	ND		ND	ND	ND	0.0081
	GW-AA-O-2-53-DUP	17.46	2.1	0.1616	1.569	ND		ND	ND	ND	0.0083
	GW-AA-O-2-63	36.29	ND								
	GW-AA-O-2-73FT	34.98	ND								
	GW-AA-O-2-83FT	385.9	17.6								
	GW-AA-O-2-93FT	855.9	32.5	0.0094	0.5	ND		ND	ND	ND	0.018
	GW-AA-O-2-103FT	462.9	16.8								
	GW-AA-O-2-113FT	1008.3	71								
	GW-AA-O-2-121FT	565.3	17.8								
	GW-AA-O-2-124	75.58	ND	0.042	0.23	0.08		0.13	0.063	0.000098	0.35
	GW-AA-O-3-28FT	0.48	ND	ND	ND	ND		ND	ND	ND	0.0089
	GW-AA-O-3-38FT	17.27	ND								
	GW-AA-O-3-48FT	14.18	ND								
	GW-AA-O-3-58FT	10.87	ND								
	GW-AA-O-3-68FT	11.72	ND	0.0092	4.4	ND		ND	ND	ND	0.018

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
O	GW-AA-O-3-78FT	13.95	ND								
	GW-AA-O-3-88FT	104.52	6.9								
	GW-AA-O-3-98FT	344.8	19.2								
	GW-AA-O-3-108FT	495.3	18.92	0.0355	0.086	ND		ND	0.0039	ND	0.021
	GW-AA-O-3-118	691.7	31.4								
	GW-AA-O-3-128	523.4	24.7	ND	ND	ND		ND	0.0051	ND	0.051
P	GW-AA-P-1-24FT	29	ND	ND	1.23	0.14	ND	ND	ND	ND	0.0032
	GW-AA-P-1-24FT-DUP	46.83	ND	ND	ND	0.05	ND	0.0012	ND	ND	ND
	GW-AA-P-1-34FT	ND	ND								
	GW-AA-P-1-44FT	ND	ND								
	GW-AA-P-1-54FT	ND	ND								
	GW-AA-P-1-64FT	1	26.3	0.0042	0.55	0.11		ND	ND	ND	0.013
	GW-AA-P-1-74FT	5.8	6.4				1.4324E-05				
	GW-AA-P-1-84FT	12	5.9								
	GW-AA-P-1-94FT	5.33	ND								
	GW-AA-P-1-104FT	5090	169.2	0.0072	4.7	0.11		0.012	ND	0.000074	0.08
	GW-AA-P-1-114FT	4660	87.5								
	GW-AA-P-1-120FT	2399.4	41.7	0.011	3.9	0.13	0.00000069	ND	ND	ND	0.069
	GW-AA-P-2-24	1.2	ND	ND	ND	ND		0.0019	ND	ND	0.0036
	GW-AA-P-2-24 Filtered		ND					ND	ND	ND	ND
	GW-AA-P-2-34	0.33	ND								
	GW-AA-P-2-34-DUP	0.36	ND								
	GW-AA-P-2-44	0.26	ND								
	GW-AA-P-2-54	0.36	ND								
	GW-AA-P-2-64	2.77	ND	ND	ND	ND		0.0021	ND	ND	0.0046
	GW-AA-P-2-64 Filtered		ND					ND	ND	ND	ND
	GW-AA-P-2-74	0.63	ND								
	GW-AA-P-2-84	0.67	ND								
	GW-AA-P-2-94	4.6	ND								
	GW-AA-P-2-104	7631.9	285.3	0.0084	32	ND		0.0063	ND	ND	0.016
	GW-AA-P-2-104 Filtered		273.3					0.00094	ND	ND	ND
	GW-AA-P-2-114	5800	187								

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
	GW-AA-P-2-114-DUP	6500	166.9								
	GW-AA-P-2-122	3318	127	ND	ND	ND		0.0076	ND	ND	0.018
	GW-AA-P-2-122-Filtered		167					0.0014	ND	ND	0.0078
	GW-AA-P-3-32	ND	ND	ND	ND	ND		0.095	0.09	0.00016	0.42
	GW-AA-P-3-32-Filtered		ND					0.0038	ND	ND	0.0038
	GW-AA-P-3-42	1.57	ND								
	GW-AA-P-3-42-DUP	0.54	ND								
	GW-AA-P-3-52	0.28	ND								
	GW-AA-P-3-62	1.37	ND								
	GW-AA-P-3-62-DUP	0.9	ND								
P	GW-AA-P-3-72	1.27	ND	ND	22	ND		0.0085	0.0049	ND	0.036
	GW-AA-P-3-72 Filtered		ND					ND	ND	ND	0.0046
	GW-AA-P-3-82	1.28	ND								
	GW-AA-P-3-92	ND	ND								
	GW-AA-P-3-102	1.37	ND								
	GW-AA-P-3-112	8.46	ND	ND	ND	ND		0.04	0.0073	ND	0.097
	GW-AA-P-3-112 Filtered		ND					ND	ND	ND	0.014
	GW-AA-P-3-122	2.8	ND								
	GW-AA-P-3-126	17.29	ND	ND	ND	ND		ND	0.0042	ND	0.15
	GW-AA-P-3-126-Filtered		ND					ND	ND	ND	0.03
	GW-AA-Q-1-50	154.31	177.7	0.011	3.23	ND		0.083	0.16	0.00015	1
	GW-AA-Q-1-50-Filtered		148.7					ND	ND	ND	0.0078
	GW-AA-Q-1-60	254.19	91.9								
	GW-AA-Q-1-60-DUP	244.69	112.5								
	GW-AA-Q-1-70	101.1	29.2								
	GW-AA-Q-1-80	132.89	88.78	0.212	0.19	ND		0.035	0.011	0.00021	0.16
Q	GW-AA-Q-1-90	225.14	125.7								
	GW-AA-Q-1-100	200	17.6								
	GW-AA-Q-1-110	146.69	13.4								
	GW-AA-Q-1-120	343	62.8	ND	ND	ND		0.14	0.042	ND	0.44
	GW-AA-Q-1-120-Filtered		47.8					0.0013	ND	ND	0.023
	GW-AA-Q-1-127 1/2	918	2959	0.132	2.2	ND		0.069	0.045	ND	0.34

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q	GW-AA-Q-1-127 1/2-Filtered		4043.3					0.0012	ND	ND	0.023
	GW-AA-Q-1-127 1/2-DUP	1163.7	3649	0.652	2.6	ND		0.078	0.053	ND	0.38
	GW-AA-Q-2-60	12.66	69.8	ND	ND	ND	0.00000002	0.055	0.032	0.00028	0.23
	GW-AA-Q-2-60-Filtered		1.32					ND	ND	ND	0.0057
	GW-AA-Q-2-70	13.93	12.4								
	GW-AA-Q-2-80FT	17.27	76.8	ND	24.56	0.313		ND	0.0026	0.00048	0.061
	GW-AA-Q-2-90	16.92	24.7								
	GW-AA-Q-2-100	12.39	13.7				4.62E-07				
	GW-AA-Q-2-110	5.28	ND								
	GW-AA-Q-2-110-DUP	6.74	2.17								
	GW-AA-Q-2-120	12.43	6.2	ND	ND	ND		0.23	0.16	ND	0.32
	GW-AA-Q-2-120-Filtered		ND					ND	ND	ND	0.011
	GW-AA-Q-2-130	10.88	ND								
	GW-AA-Q-2-130B			ND	ND	ND	ND	0.0062	ND	ND	0.012
	GW-AA-Q-2-130B-Filtered		ND					0.001	ND	ND	0.0034
	GW-AA-Q-3-50	170.74	27.8	0.0654	ND	ND		0.021	0.028	0.000085	0.15
	GW-AA-Q-3-50-Filter		10					0.0011	ND	ND	0.0093
	GW-AA-Q-3-60	51	37								
	GW-AA-Q-3-70	9.2	12.8								
	GW-AA-Q-3-80	13	20.58	0.018	12.98	ND		0.011	0.0028	0.00053	0.063
	GW-AA-Q-3-80-DUP	12	13.6	0.021	2.6	ND		0.011	ND	ND	0.063
	GW-AA-Q-3-90	2.91	1.7								
	GW-AA-Q-3-100	2.5	1.4								
	GW-AA-Q-3-110	1.6	ND								
	GW-AA-Q-3-120	2.84	1.5	ND	1	ND		0.1	0.0093	ND	0.35
	GW-AA-Q-3-120 Filtered		ND					0.0011	ND	ND	0.028
	GW-AA-Q-4-50	59.36	11.4	0.16	ND	ND		0.015	0.012	ND	0.088
	GW-AA-Q-4-50 Filtered		8.4					ND	ND	ND	0.024
	GW-AA-Q-4-60	11.61	2.2								
	GW-AA-Q-4-70	6.3	2								
	GW-AA-Q-4-80	46.6	2.97	0.0326	1.61	ND		0.018	0.0099	0.00018	0.12

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q	GW-AA-Q-4-90	53.8	4.2								
	GW-AA-Q-4-100	9.9	ND								
	GW-AA-Q-4-100-DUP	8.88	ND								
	GW-AA-Q-4-110	1.63	ND	0.0136	0.49	ND		0.15	0.11	0.000084	0.37
	GW-AA-Q-4-110 Filtered		ND					0.00088	ND	ND	0.01
	GW-AA-Q-5-45	483	113.9	0.1148	27	ND		0.024	0.037	0.00019	1
	GW-AA-Q-5-45-Filtered		73					0.0012	ND	ND	0.015
	GW-AA-Q-5-55	256.52	6.6								
	GW-AA-Q-5-55-DUP	243.79	4.1								
	GW-AA-Q-5-65	63.41	519.3								
	GW-AA-Q-5-75	18.62	140.5								
	GW-AA-Q-5-75-DUP	15.54	159.6								
	GW-AA-Q-5-85	42.35	388.5	0.04	33	ND		0.02	0.03	ND	0.2
	GW-AA-Q-5-85-Filtered		207.1					ND	ND	ND	0.034
	GW-AA-Q-5-95	99.18	141.9								
	GW-AA-Q-5-105	ND	ND								
	GW-AA-Q-5-106			ND	ND	ND		0.0084	0.0031	ND	0.0083
	GW-AA-Q-5-106-Filtered		ND					ND	ND	ND	ND
	GW-AA-Q-6-24	701	592.85	0.999	19	ND		ND	0.0065	ND	ND
	GW-AA-Q-6-24-Filter		344.1					ND	ND	ND	ND
	GW-AA-Q-6-24-DUP	672	637	1.2011	ND	ND		ND	0.0037	ND	ND
	GW-AA-Q-6-24-DUP-Filter		518.5					ND	0.0027	ND	ND
	GW-AA-Q-6-34	12052	469.2								
	GW-AA-Q-6-34-DUP	12049	277.5								
	GW-AA-Q-6-44	534.7	62								
	GW-AA-Q-6-54	1115.2	45.9								
	GW-AA-Q-6-64	116.28	56	0.0693	ND	ND		0.011	0.0084	ND	0.024
	GW-AA-Q-6-64-Filtered		28.7					ND	ND	ND	0.0037
	GW-AA-Q-6-74	74.06	19								
	GW-AA-Q-6-84	611	47.4								
	GW-AA-Q-6-94	96.35	5.2								
	GW-AA-Q-6-104	115.59	9.6	ND	ND	ND		0.0086	0.0047	ND	0.021

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q	GW-AA-Q-6-104-Filtered		9.5					ND	ND	ND	0.0055
	GW-AA-Q-6-110	42.91	5	ND	1	ND		0.028	0.0095	ND	0.051
	GW-AA-Q-6-110-Filtered		4.4					ND	ND	ND	0.013
	GW-AA-Q-7-24	97.68	5.8	ND	ND	ND	ND	ND	0.0032	ND	ND
	GW-AA-Q-7-34	275.69	5.4								
	GW-AA-Q-7-44	14.58	1.7								
	GW-AA-Q-7-54	12.39	3.8								
	GW-AA-Q-7-64	13.42	ND	0.0078	0.48	ND		ND	ND	ND	ND
	GW-AA-Q-7-64-Filtered		ND					ND	ND	ND	ND
	GW-AA-Q-7-74	13.37	1.2								
	GW-AA-Q-7-74-DUP	10.84	ND								
	GW-AA-Q-7-84	35.77	ND				ND				
	GW-AA-Q-7-94	6.89	ND								
	GW-AA-Q-7-104	10.65	ND	ND	ND	ND	ND	0.0037	ND	ND	0.015
	GW-AA-Q-7-104-Filtered		ND					ND	ND	ND	0.011
	GW-AA-Q-7-104-DUP	10.11	1.3	ND	ND	0.04	ND	0.0024	ND	ND	0.015
	GW-AA-Q-7-104-Filtered-DUP		ND					0.00098	ND	ND	0.01
	GW-AA-Q-8-24	2.97	ND	0.0269	ND	ND		0.01	ND	ND	0.01
	GW-AA-Q-8-24-Filtered		0.62					ND	ND	ND	ND
	GW-AA-Q-8-34	1.42	ND								
	GW-AA-Q-8-34-DUP	0.88	ND								
	GW-AA-Q-8-44	20.61	ND								
	GW-AA-Q-8-54	19.85	2.25								
	GW-AA-Q-8-64	8.74	2.03	ND	ND	ND		ND	0.003	ND	0.016
	GW-AA-Q-8-64-Filtered		ND					ND	ND	ND	ND
	GW-AA-Q-8-74	1.42	ND								
	GW-AA-Q-8-84	2.13	ND								
	GW-AA-Q-8-94	1.53	ND								
	GW-AA-Q-8-104	1.13	ND	ND	ND	ND		0.0027	ND	ND	0.015
	GW-AA-Q-8-104-Filter		ND					0.0014	ND	ND	0.0096
	GW-AA-Q-8-111	8.27	2.39	ND	ND	ND		0.026	0.0045	ND	0.032
	GW-AA-Q-8-111-Filter		ND					0.0017	ND	ND	0.0052

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
	GW-AA-R-1-28	2582.2	11360	0.632	110	ND	1.9E-08	0.067	0.034	0.00011	0.19
	GW-AA-R-1-48	106250	123147								
	GW-AA-R-1-58	33773	82520				ND				
	GW-AA-R-1-68	39514	85240								
	GW-AA-R-1-78	8588	28530	1.843	199.6	ND		0.067	0.016	ND	0.35
R	GW-AA-R-1-88	1899	1960								
	GW-AA-R-1-98	2090	6502.1								
	GW-AA-R-1-108	18825	25540								
	GW-AA-R-1-118	10920.8	21274								
	GW-AA-R-1-128	3201.5	11464								
	GW-AA-R-1-131	3364	15230	0.583	51.3	ND	ND	0.11	0.035	ND	0.39
	GW-AA-S-1-24FT	4.03	3.3	0.072	ND	ND	6.4E-09	ND	0.0026	ND	0.025
	GW-AA-S-1-34FT	3.64	2.8								
	GW-AA-S-1-44	ND	ND								
	GW-AA-S-1-54	ND	ND								
	GW-AA-S-1-54-DUP	11.76	3.5								
	GW-AA-S-1-64	0.42	ND	ND	ND	ND		ND	ND	ND	0.02
	GW-AA-S-1-74FT	5.33	ND								
	GW-AA-S-1-84FT	31.47	ND				ND				
	GW-AA-S-1-84FT-DUP	31.77	ND				ND				
	GW-AA-S-1-94FT	28.27	ND								
S	GW-AA-S-1-104	72.44	ND	ND	ND	ND		0.058	0.023	ND	0.16
	GW-AA-S-1-114	411.57	10.4								
	GW-AA-S-1-124	97.17	ND	ND	ND	0.12	ND	0.035	0.008	ND	0.099
	GW-AA-S-2-28	10.6	ND	ND	ND	ND		ND	0.0039	ND	0.03
	GW-AA-S-2-38	ND	ND								
	GW-AA-S-2-48	1.23	ND								
	GW-AA-S-2-58	ND	ND								
	GW-AA-S-2-68	1.6	ND								
	GW-AA-S-2-78	8.9	ND	0.011	ND	ND		ND	ND	ND	0.024
	GW-AA-S-2-88	24.4	ND								
	GW-AA-S-2-98	36.57	ND								

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
	GW-AA-S-2-108	140	6.4								
	GW-AA-S-2-118	340	14.8								
	GW-AA-S-2-118 1/2	292.3	8.9	0.1	0.099	ND		0.019	0.003	ND	0.037
	GW-AA-S-3-24FT	12.39	ND	ND	ND	0.1		ND	ND	ND	ND
	GW-AA-S-3-34FT	1.2	ND								
	GW-AA-S-3-44FT	0.34	0.88								
	GW-AA-S-3-54FT	7.7	ND								
S	GW-AA-S-3-64FT	2.1	1.4	ND	ND	ND		ND	ND	ND	0.0094
	GW-AA-S-3-74FT	4.21	10.87								
	GW-AA-S-3-84FT	17.69	ND								
	GW-AA-S-3-94FT	53.26	1.5								
	GW-AA-S-3-104FT	182.34	17.77	0.07	ND	ND		ND	0.0061	ND	ND
	GW-AA-S-3-114FT	531.4	19.4								
	GW-AA-S-3-124FT	461.8	18.2								
	GW-AA-S-3-132FT	257.3	8.3	0.0921	0.12	0.04		ND	ND	ND	ND
	GW-UAA-1-20FT	ND	ND	ND	ND	ND		ND	0.003	ND	0.022
	GW-UAA-1-30FT	ND	ND								
	GW-UAA-1-40FT	ND	ND								
	GW-UAA-1-50FT	1.24	ND								
	GW-UAA-1-60FT	3.3	ND	0.0145	0.05	ND		ND	ND	ND	0.034
	GW-UAA-1-70FT	4.1	ND								
	GW-UAA-1-80FT	281.4	5.1								
	GW-UAA-1-90FT	451.73	16.6								
Upgradient	GW-UAA-1-100FT	404.42	25.02	0.02	ND	ND		0.0015	ND	ND	230
	GW-UAA-1-110FT	713.78	48.7	0.0173	ND	ND		0.038	0.0052	ND	300
	GW-UAA-2-20FT	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.026
	GW-UAA-2-30FT	25.72	ND								
	GW-UAA-2-30FT-DUP	25.68	ND								
	GW-UAA-2-40FT	126.37	ND								
	GW-UAA-2-50FT	1505.3	ND								
	GW-UAA-2-60FT	1536	6.8	ND	ND	ND		ND	ND	ND	0.014
	GW-UAA-2-70FT	2261	7.5				ND				

Table 5-4
Alluvial Aquifer Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Upgradient	GW-UAA-2-80FT	2739	15.6								
	GW-UAA-2-90FT	1910	314.1								
	GW-UAA-2-100FT	2638.2	418.9	0.089	0.216	ND		0.0059	ND	ND	0.054
	GW-UAA-2-110FT	2579.8	1336.7								
	GW-UAA-2-120FT	765.3	936.4								
	GW-UAA-2-124FT	2150.2	495	0.17	87.18	ND	ND	ND	ND	ND	0.042
	GW-UAA-3-24FT-R	ND	ND	ND	ND	ND	ND	0.0019	ND	ND	0.0094
	GW-UAA-3-34FT-R	ND	ND								
	GW-UAA-3-44FT	165.12	ND								
	GW-UAA-3-54FT	163.34	ND								
	GW-UAA-3-64	33.1	ND	ND	0.23	0.08		ND	ND	ND	0.045
	GW-UAA-3-74	163.03	ND								
	GW-UAA-3-84	1363	661.2				ND				
	GW-UAA-3-94	2155	1872.9								
	GW-UAA-3-104	2124	4437.99	0.068	1.3	ND		0.055	0.0031	ND	0.36
	GW-UAA-3-114	574.3	1918.67								
	GW-UAA-3-116	361.8	1603.69	0.034	0.086	0.06	ND	0.025	ND	ND	0.23
	GW-AA-UAA-4-20	1	ND	ND	ND	ND		ND	ND	ND	ND
	GW-AA-UAA-4-20-Filtered		ND					ND	ND	ND	ND
	GW-AA-UAA-4-20-DUP	ND	ND	ND	ND	ND		ND	ND	ND	ND
	GW-AA-UAA-4-20-DUP-Filtered		ND					ND	ND	ND	ND
	GW-AA-UAA-4-30	1.1	ND								
	GW-AA-UAA-4-40	1.2	ND								
	GW-AA-UAA-4-50	3.34	ND								
	GW-AA-UAA-4-60	0.36	4.75	ND	ND	ND		ND	ND	ND	ND
	GW-AA-UAA-4-60-Filtered		ND					ND	ND	ND	ND
	GW-AA-UAA-4-70	ND	ND								
	GW-AA-UAA-4-80	0.6	ND								
	GW-AA-UAA-4-90	0.5	ND								
	GW-AA-UAA-4-100	0.38	ND	ND	ND	0.038		0.0068	0.0034	ND	0.023
	GW-AA-UAA-4-100-Filtered		ND					ND	ND	ND	ND
	GW-AA-UAA-4-110	2.19									
	GW-AA-UAA-4-113	2.15	ND	ND	ND	ND		0.094	0.022	ND	0.31
	GW-AA-UAA-4-113-Filtered		ND					ND	ND	ND	0.011

Table 5-5a
Ferrous Iron Analytical Data
Alluvial Aquifer Samples
Sauget Area 2 RI/FS

Site	Sample ID	Date	Concentration (mg/L)
Site O	GW-AA-O-1-96	07/09/02	0.82
	GW-AA-O-1-120	07/10/02	1.30
	GW-AA-O-2-93	06/24/02	1.84
	GW-AA-O-2-124	07/08/02	1.87
	GW-AA-O-3-68FT	06/25/02	1.76
	GW-AA-O-3-108FT	06/26/02	2.48
	GW-AA-O-3-128FT	06/27/02	1.85
	GW-AA-O-3-128FT	07/18/02	1.30
Site P	GW-AA-P-1-104FT	07/10/02	2.41
	GW-AA-P-1-120FT	07/10/02	1.98
	GW-AA-P-1-24FT	07/08/02	2.00
	GW-AA-P-1-64FT	07/09/02	0.73
	GW-AA-P-2-104FT	08/06/02	2.87
	GW-AA-P-2-122FT	08/07/02	1.63
	GW-AA-P-2-24FT	08/05/02	0.78
	GW-AA-P-2-64FT	08/05/02	3.30
	GW-AA-P-3-112FT	08/09/02	2.60
	GW-AA-P-3-126FT	08/12/02	2.09
	GW-AA-P-3-32FT	08/07/02	1.14
	GW-AA-P-3-72FT	08/08/02	2.40
Site Q	GW-AA-Q-1-120FT	07/30/02	1.45
	GW-AA-Q-1-127.5FT	07/30/02	1.10
	GW-AA-Q-1-50FT	07/29/02	1.35
	GW-AA-Q-1-80FT	07/16/02	1.70
	GW-AA-Q-2-120FT	07/31/02	1.20
	GW-AA-Q-2-130FTB	08/01/02	2.15
	GW-AA-Q-2-60FT	07/31/02	1.56
	GW-AA-Q-2-80FT	07/18/02	2.05
	GW-AA-Q-3-120FT	08/05/02	2.10
	GW-AA-Q-3-50FT	08/02/02	1.30
	GW-AA-Q-3-80FT	07/22/02	2.00
	GW-AA-Q-4-110FT	08/06/02	2.04
	GW-AA-Q-4-50FT	08/05/02	0.68
	GW-AA-Q-4-80FT	07/23/02	1.69
	GW-AA-Q-5-106FT	08/08/02	1.80
	GW-AA-Q-5-45FT	08/07/02	0.83
	GW-AA-Q-5-85FT	08/08/02	0.79
	GW-AA-Q-6-104FT	07/29/02	2.07
	GW-AA-Q-6-110FT	07/29/02	2.51

Notes: Samples analyzed on site using a Hach spectrophotometer.

Table 5-5a
Ferrous Iron Analytical Data
Alluvial Aquifer Samples
Sauget Area 2 RI/FS

Site	Sample ID	Date	Concentration (mg/L)
Site Q	GW-AA-Q-6-24FT	07/25/02	0.12
	GW-AA-Q-6-24FT-DUP	07/25/02	0.02
	GW-AA-Q-6-64FT	07/26/02	1.89
	GW-AA-Q-7-104FT	07/30/02	1.01
	GW-AA-Q-7-104FT-DUP	07/30/02	1.42
	GW-AA-Q-7-24FT	07/25/02	2.53
	GW-AA-Q-7-64FT	07/25/02	2.19
	GW-AA-Q-8-104FT	08/02/02	1.65
	GW-AA-Q-8-111FT	08/02/02	2.29
	GW-AA-Q-8-24FT	07/31/02	1.76
	GW-AA-Q-8-64FT	07/31/02	1.80
Site R	GW-AA-R-1-131FT	07/23/02	2.10
	GW-AA-R-1-28	07/19/02	1.38
	GW-AA-R-1-78	07/22/02	1.70
Site S	GW-AA-S-1-104	07/12/02	2.43
	GW-AA-S-1-124	07/15/02	1.44
	GW-AA-S-1-24FT	06/27/02	1.82
	GW-AA-S-1-64	06/27/02	2.84
	GW-AA-S-1-64	07/12/02	2.1
	GW-AA-S-2-118.5	07/17/02	1.45
	GW-AA-S-2-28	07/15/02	0.89
	GW-AA-S-2-78	07/16/02	1.32
	GW-AA-S-3-104	07/01/02	0.34
	GW-AA-S-3-132	07/02/02	0.87
	GW-AA-S-3-24FT	06/27/02	1.38
	GW-AA-S-3-24FT	07/16/02	1.99
	GW-AA-S-3-64FT	06/28/02	2.41
Upgradient	GW-AA-UAA-4-100FT	07/26/02	1.83
	GW-AA-UAA-4-113FT	07/29/02	1.20
	GW-AA-UAA-4-20FT	07/24/02	1.13
	GW-AA-UAA-4-60FT	07/25/02	1.40

Notes: Samples analyzed on site using a Hach spectrophotometer.

Table 5-5b
Ferrous Iron Analytical Data
Bedrock Aquifer Samples
Sauget Area 2 RI/FS

Site	Sample ID	Date	Concentration (mg/L)
Site O	BDRK-O-1	8/30/2002	0.15
	BDRK-O-1	2/11/2003	0.30
	BDRK-O-1	5/1/2003	0.27
	BDRK-O-1	6/24/2003	0.29
	BDRK-O-1-DUP	2/11/2003	0.30
	BDRK-O-1-DUP	6/24/2003	0.33
Site P	BDRK-P-1	9/9/2002	0.02
	BDRK-P-1	2/11/2003	3.05
	BDRK-P-1	4/28/2003	1.87
	BDRK-P-1	6/17/2003	0.55
	BDRK-P-1-DUP	4/28/2003	1.39
Site Q	BDRK-Q-1	9/9/2002	1.92
	BDRK-Q-1	2/10/2003	0.39
	BDRK-Q-1	5/5/2003	0.20
	BDRK-Q-1	6/16/2003	1.12
	BDRK-Q-1-DUP	5/5/2003	0.26
	BDRK-Q-2	9/3/2002	0.10
	BDRK-Q-2	2/13/2003	0.28
	BDRK-Q-2	4/25/2003	0.32
	BDRK-Q-2	6/23/2003	0.00
Site R	BDRK-R-1	9/5/2002	0.15
	BDRK-R-1	2/10/2003	0.25
	BDRK-R-1	4/24/2003	1.01
	BDRK-R-1	6/17/2003	0.32
Site S	BDRK-S-1	9/6/2002	0.00
	BDRK-S-1	2/11/2003	0.22
	BDRK-S-1	5/2/2003	0.13
	BDRK-S-1	6/12/2003	0.01

Notes: Samples analyzed on site using a Hach spectrophotometer.

Table 5-6
Quantitative Porosity Determination
Thin Section Point Count Modal Analysis
Sauget Area 2 RI/FS

Site	Sample ID	Intercryst.	Moldic	Vuggy	Micro.*	Intraparticle	Interparticle	Fracture	Solution Seam	Total
Site O	O-1-132	0	0	0	0	0	0	0	0	0
	O-1-134	0	0	0	0	0	0	0	0	0
	O-1-136	0	0	0	0	0	0	0	0	0
	O-1-139	0	0	0	0	0	0	0	0	0
	O-1-142	0	0	0	0	0	0	0	0	0
	O-1-145	0	0	0	0	0	0	0	0	0
	O-1-147	0	0	0	tr	tr	0	0	0	tr
	O-1-151	2	2	0	1	0	0	0	0	5
	O-1-153	1	2	0	tr	0	0	tr	0	3
Site P	P-1-137	0	0	0	0	0	0	0	0	0
	P-1-139	3	7	tr	4	tr	10	0	0	24
	P-1-141	0	0	0	0	0	0	0	0	0
	P-1-143	0	0	0	0	0	0	0	0	0
	P-1-145	tr	0	0	0	0	0	0	0	tr
	P-1-148	tr	0	0	0	0	tr	0	0	tr
	P-1-151	tr	tr	0	3	tr	0	0	0	3
	P-1-153	tr	0	1	tr	0	0	tr	0	1
	P-1-155	0	0	0	0	0	0	0	0	0
	P-1-158	0	0	0	0	0	0	0	0	0
Site Q	Q-1-142	0	0	0	0	0	0	0	0	0
	Q-1-145.5	0	0	0	0	0	0	0	0	0
	Q-1-149.5	0	0	0	0	0	0	0	0	0
	Q-1-151.5	0	0	0	0	0	0	0	0	0
	Q-1-153.5	0	0	0	tr	0	0	0	0	tr
	Q-1-155.5	0	0	0	tr	tr	tr	0	0	tr
	Q-1-157	0	0	0	tr	tr	0	0	0	tr
	Q-1-159	tr	0	0	0	0	0	0	0	tr

Notes:
* Includes only those detectable in thin section, as indicated by bluish haze. Does not include very small modropores certain to be present wi
tr - less than 0.5%
Results reported in percentage - Average of total volume of thin section.

Table 5-6
Quantitative Porosity Determination
Thin Section Point Count Modal Analysis
Sauget Area 2 RI/FS

Site	Sample ID	Intercryst.	Moldic	Vuggy	Micro.*	Intraparticle	Interparticle	Fracture	Solution Seam	Total
Site Q	Q-1-161	tr	tr	0	3	0	0	0	0	3
	Q-1-163	0	0	0	0	0	0	0	0	0
	Q-2-126	4	tr	0	6	tr	2	0	0	12
	Q-2-129	7	1	0	2	tr	5	0	0	15
	Q-2-131	1	tr	0	3	2	1	0	0	7
	Q-2-133	tr	tr	0	tr	tr	0	0	0	tr
	Q-2-135	0	0	0	0	0	0	0	0	0
	Q-2-137	0	0	0	tr	tr	0	0	0	tr
	Q-2-141	8	14	tr	2	0	tr	0	0	24
	Q-2-143	6	13	tr	2	0	tr	0	0	21
Site R	R-1-142	0	tr	1	3	tr	0	0	0	4
	R-1-144	2	4	tr	2	0	0	tr	0	8
	R-1-146	tr	0	0	tr	0	0	0	0	tr
	R-1-149	4	2	0	3	0	tr	0	tr	9
	R-1-151	0	0	0	tr	tr	0	tr	0	tr
	R-1-153	0	0	0	0	0	0	0	0	0
	R-1-155	0	0	0	0	0	0	0	0	0
	R-1-157	0	tr	0	tr	0	0	0	0	tr
	R-1-159	1	tr	0	1	0	0	0	0	2
	R-1-161	0	0	0	tr	tr	0	0	0	tr
	R-1-163	0	0	0	0	0	0	0	0	0
Site S	S-1-147	5	6	1	2	tr	0	0	0	14
	S-1-155	tr	tr	0	tr	0	0	tr	0	tr
	S-1-157	5	4	0	3	0	0	0	0	12
	S-1-159	0	tr	0	0	0	0	0	0	0
	S-1-161	0	0	0	0	0	0	0	0	0
	S-1-163	0	0	0	0	0	0	0	0	0
	S-1-165	0	0	0	0	0	0	0	0	0

Notes:
* Includes only those detectable in thin section, as indicated by bluish haze. Does not include very small modropores certain to be present wi
tr - less than 0.5%
Results reported in percentage - Average of total volume of thin section.

Table 5-7

GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS											
		WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PZ-1	20-25	(21.6)						135.7	(111.6)		(32.8)	(36.5)	-(3.7)
PZ-1	22.95	22.1											
PZ-1	23.5	21.2			0.7								
PZ-1	23.75	21.2	SM	22.0		8.1	7.3			2.664			
PZ-1	24.05	21.9											
PZ-1	75-80	(8.3)						109.9	(101.5)		(38.4)	(18.0)	(20.4)
PZ-1	78.05	7.7											
PZ-1	78.6	8.6											
PZ-1	78.85	8.4	SW-SM	7.5		8.8	7.7			2.645			
PZ-1	79.15	8.5			0.2								
PZ-1	115-120	(9.2)						128.9	(118.1)		(28.9)	(19.7)	(9.2)
PZ-1	118	10.4											
PZ-1	118.55	10.4			0.2								
PZ-1	118.8	9.3	SP	0.9		8.5	7.5			2.664			
PZ-1	119.1	6.7											
PZ-1	120-125	(7.5)						135.6	(126.1)		(23.7)	(16.6)	(7.0)
PZ-1	123.05	7.2											
PZ-1	123.6	8.1			0.7								
PZ-1	123.85	7.3	SW-SM	10.5		8.4	7.4			2.651			
PZ-1	124.15	7.5											
PZ-2	17-22	(9.4)						111.1	(101.5)		(38.9)	(20.1)	(18.8)
PZ-2	20	12.3											
PZ-2	20.55	5.8			0.3								
PZ-2	20.8	8.9	SM	18.9		8.0	7.5			2.666			
PZ-2	21.1	10.7											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-7

GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS												
		WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PZ-2	80-84.2	(8.9)						135.7	(124.7)		(24.7)	(19.1)	(5.7)
PZ-2	82.45	13.1											
PZ-2	83	8.8			0.2								
PZ-2	83.25	6.5	SP	0.5		8.6	7.2			2.658			
PZ-2	83.55	7.1											
PZ-2	117-120.3	(12.4)						127.0	(112.9)		(31.8)	(24.8)	(7.0)
PZ-2	118.7	7.7											
PZ-2	119.25	14.3			0.2								
PZ-2	119.5	14.5	SP	0.4		8.0	7.2			2.657			
PZ-2	119.8	13.2											
PZ-3	30-35	(20.6)						118.8	(98.5)		(40.6)	(35.4)	(5.2)
PZ-3	32.9	18.7											
PZ-3	33.45	20.7			0.3								
PZ-3	33.7	21.8	SP-SM	5.4		8.2	7.6			2.661			
PZ-3	34	21.1											
PZ-3	65-70	(10.9)						133.8	(120.6)		(27.0)	(22.4)	(4.6)
PZ-3	67.95	7.9											
PZ-3	68.5	10.8			0.2								
PZ-3	68.75	11.0	SP	3.1		8.0	7.4			2.653			
PZ-3	69.05	13.9											
PZ-3	110-115	(9.5)						141.7	(129.3)		(22.3)	(20.3)	(2.0)
PZ-3	112.95	9.7											
PZ-3	113.5	9.9			0.4								
PZ-3	113.75	9.5	SM	15.0		8.2	7.6			2.672			
PZ-3	114.05	9.1											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-7

GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS: WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PIEZ-4	48.31	8.0	SP	0.8		6.4	6.2			2.651			
PIEZ-4	48.56	9.2											
PIEZ-4	82-87	(13.0)						131.5	(116.3)		(29.8)	(25.7)	(4.1)
PIEZ-4	84.95	14.9											
PIEZ-4	85.5	14.4			0.2								
PIEZ-4	85.75	11.5	SP	0.7		8.4	7.5			2.659			
PIEZ-4	86.05	11.3											
PIEZ-4	123-128	(8.0)			0.2			135.5	(125.4)		(23.9)	(17.5)	(6.4)
PIEZ-4	126.35	7.6											
PIEZ-4	126.95	8.8											
PIEZ-4	127.2	7.6	SW	4.5		8.7	7.5			2.645			
PIEZ-4	127.45	8.0											
PIEZ-5	26-31	(20.5)			0.4			133.4	(110.7)		(33.2)	(35.2)	-(2.1)
PIEZ-5	26.75	20.3											
PIEZ-5	27.25	21.3											
PIEZ-5	27.5	23.1	SP-SM	7.1		8.8	6.7			2.660			
PIEZ-5	27.75	17.1											
PIEZ-5	75-80	(6.3)						133.5	(125.7)		(24.8)	(14.4)	(10.4)
PIEZ-5	78	7.9											
PIEZ-5	78.55	4.6			0.2								
PIEZ-5	78.8	4.7	SP	0.1		8.4	7.2			2.680			
PIEZ-5	79.1	7.9											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-7
GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS: WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PIEZ-5	116.8	9.3	SC	30.0		8.2	7.6			2.712			
PIEZ-5	117.1	8.5											
PIEZ-6	26-31	(17.0)						126.1	(107.8)		(35.6)	(31.3)	(4.3)
PIEZ-6	29	18.5											
PIEZ-6	29.55	17.1			0.3								
PIEZ-6	29.8	15.8	SP	0.9		8.5	7.4			2.688			
PIEZ-6	30.1	16.5											
PIEZ-6	66-71	(19.0)						128.8	(108.2)		(33.9)	(33.3)	(0.6)
PIEZ-6	68.95	16.3											
PIEZ-6	69.5	21.3			1.3								
PIEZ-6	69.75	21.2	SP	2.1		7.7	7.2			2.627			
PIEZ-6	70.05	17.3											
PIEZ-6	86-91	(5.7)						139.1	(131.6)		(20.5)	(13.2)	(7.3)
PIEZ-6	89	6.2											
PIEZ-6	89.55	6.4			0.3								
PIEZ-6	89.8	4.2	SP	0.1		8.6	7.6			2.657			
PIEZ-6	90.1	6.0											
PIEZ-6	101-106	(30.5)						119.6	(91.6)		(45.1)	(45.0)	(0.1)
PIEZ-6	104	12.2											
PIEZ-6	104.45	36.6			2.7								
PIEZ-6	104.8	37.7	CL	94.0		7.7	7.5			2.677			
PIEZ-6	105.1	35.6											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-7

GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS												
		WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PZ-7	23.45	30.7	ML	77.7		9.5	8.6			2.655			
PZ-7	23.75	26.7											
PZ-7	65-70	(17.0)						132.3	(113.0)		(32.0)	(31.2)	(0.8)
PZ-7	68	18.9											
PZ-7	68.55	18.6			0.1								
PZ-7	68.8	18.0	SP	2.9		8.6	7.4			2.669			
PZ-7	69.1	12.6											
PZ-7	105-110	(9.9)						141.4	(128.6)		(24.4)	(21.3)	(3.1)
PZ-7	107.85	9.1											
PZ-7	108.4	6.7			0.3								
PZ-7	108.65	10.4	GC	30.6		8.2	7.6			2.729			
PZ-7	108.95	13.5											
PZ-8	25-30	(20.4)			0.7			129.2	(107.3)		(35.0)	(35.1)	-(0.1)
PZ-8	25.45	20.5											
PZ-8	25.8	20.3	SP	2.2		8.5	6.6			2.649			
PZ-8	25.95	20.4											
PZ-8	65-70	(9.8)			0.2			130.3	(118.7)		(28.0)	(20.6)	(7.4)
PZ-8	65.5	9.1											
PZ-8	66	10.1											
PZ-8	66.25	10.2	SP	1.2		8.9	6.7			2.644			
PZ-8	66.5	9.8											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-7
GEOTECHNICAL LABORATORY TESTING DATA SUMMARY
Sauget Area 2 RI/FS

BORING NO.	DEPTH (ft)	IDENTIFICATION TESTS: WATER CONTENT (1) (%)	USCS SYMB. (2)	SIEVE MINUS NO. 200 (%)	ORGANIC CONTENT (burnoff) (%)	pH Distilled Water	pH 0.01 M CaCl Solution	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	SPECIFIC GRAVITY	TOTAL SOIL (1) POROSITY (%)	WATER-FILLED SOIL (1) POROSITY (%)	AIR-FILLED SOIL (1) POROSITY (%)*
PZ-8	73.9	5.2	SP	0.7		8.9	7.5			2.665			
PZ-8	74.2	6.1											
PZ-8	100-105	(7.3)						147.5	(137.5)		(17.8)	(16.4)	(1.4)
PZ-8	103	8.8			0.5								
PZ-8	103.55	9.1											
PZ-8	103.8	6.5	GP	3.0		8.4	7.7			2.684			
PZ-8	104.1	4.8											
PZ-9	20-25	(13.6)						136.6	(120.3)		(27.1)	(26.5)	(0.6)
PZ-9	23.05	14.9											
PZ-9	23.6	14.2			0.2								
PZ-9	23.85	10.6	SP	0.3		8.7	7.6			2.646			
PZ-9	24.15	14.7											
PZ-9	70-75	(16.3)						135.0	(116.1)		(30.0)	(30.2)	-(0.3)
PZ-9	73	16.8											
PZ-9	73.55	16.8			0.2								
PZ-9	73.8	15.7	SP	3.3		8.6	7.5			2.661			
PZ-9	74.1	16.0											
PZ-9	100-105	(10.7)						107.0	(96.6)		(41.6)	(22.1)	(19.5)
PZ-9	103	11.1											
PZ-9	103.55	11.8			0.1								
PZ-9	103.8	10.1	SP	4.6		8.3	7.7			2.657			
PZ-9	104.1	9.7											

Notes: (1) Value in brackets are average values for the tube. Negative air-filled porosities due to material variations in the tube and measurement errors, and are indicative of a saturated material.
(2) USCS symbol based on visual observation and Sieve reported.
* - Tube Average

Table 5-8
Surface Soil Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
O	SOIL-O-1-0.5	92130	793	1.73	43072	709200	50.805	270	130	43	940
	SOIL-O-2-0.5	3.26	241	5.09	12106.4	0.78	0.02464	26	14	0.049	70
	SOIL-O-3-0.5	147	2341	936.4	13096	10764	5.933	40	20	2.9	130
P	SOIL-P-1-0.5	85.1	529	17	7.1	ND	0.011	64	74	0.23	200
	SOIL-P-2-0.5	5.46	9507	14.6	11.3	13.7	0.2593	59	170	0.072	390
	SOIL-P-3-0.5	29.7	ND	12.1	589.2	11.3	0.03805	51	57	0.088	190
	SOIL-P-4-0.5	ND	36	1318.7	2331.9	7020	ND	21	15	0.068	85
Q	SOIL-Q-1-0.5FT	3.58	21782	381.5	1307.9	23	0.0095	19	63	0.076	150
	SOIL-Q-2-0.5	6.1	16407	120	54.1	148	0.05167	230	ND	0.076	8000
	SOIL-Q-3-0.5	25.16	20840	614.7	424.2	1870	0.0133	31	270	0.4	200
	SOIL-Q-4-0.5	7.94	13889	29	258	537.1	0.6028	39	85	0.15	930
	SOIL-Q-5-0.5	6.36	1358	45.96	5.5	43	ND	37	20	0.024	110
	SOIL-Q-6-0.5	35.53	3704	ND	2300	455	0.0016	40	74	0.15	340
	SOIL-Q-7-0.5	341.3	7120	206.7	52.7	1587	3.259	15	240	ND	320
	SOIL-Q-7-0.5-DUP	1416.4	8423	258.4	159.1	3474	2.831	26	480	0.052	1800
	SOIL-Q-8-0.5	82.96	3530	8.4	3.3	21.8	0.009	54	52	0.27	100
	SOIL-Q-9-0.5	6.04	19481	3132	6.7	10800	0.19036	710	3100	1	3000
	SOIL-Q-10-0.5	2.65	6921	19.82	36.6	1072.5	0.31578	300	390	2.5	1200
	SOIL-Q-10-0.5-DUP	2.7	53430	143.5	17.8	1563.2	0.20174	410	490	2.7	1200
	SOIL-Q-11-0.5	129.76	24126	3245	2300	12989	7.553	2600	2600	2.3	3400
	SOIL-Q-11-0.5-DUP	284	29185	3113	9527.4	13815	6.009	870	2000	4.1	3600
	SOIL-Q-12-0.5	ND	1053	1104	3144.4	2879	0.03491	33	47	0.059	210

Table 5-8
Surface Soil Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
Q	SOIL-Q-13-0.5	1.94	117	245.5	1367.2	1115.2	0.02988	42	60	0.14	260
	SOIL-Q-14-0.5	4.9	141	53.2	5205.5	2587	0.02379	86	62	0.13	240
	SOIL-Q-15-0.5	30.33	1078	710.9	1711.1	323	0.0109	35	48	0.16	260
	SOIL-Q-16-0.5	331.44	718	10.43	3808.9	14.9	0.00051	21	27	0.078	140
	SOIL-Q-17-0.5	402.28	1968	3.31	15	ND	0.00052	10	20	0.036	140
	SOIL-Q-18-0.5	136.46	567	1.07	727.9	ND	0.0075	7	15	0.021	100
	SOIL-Q-19-0.5	31.61	360	53.13	5414.1	1.3	0.0029	20	30	0.052	160
	SOIL-Q-20-0.5	441.78	390	3.41	3116	ND	0.00069	21	29	0.065	270
R	SOIL-R-1-0.5	145.92	331	4.1	49100	ND	ND	23	33	0.037	91
	SOIL-R-2-0.5	103.5	ND	ND	43175	ND	ND	25	19	0.076	120
	SOIL-R-3-0.5FT	199.82	20	0.37	51101	ND	ND	15	10	0.06	47
	SOIL-R-4-0.5FT	149.96	326	1.23	5313.3	6.62	ND	15	8.6	0.063	43
S	SOIL-S-1-0.5	14	392200	74840	443550	1008500	0.0029	23	63	0.074	110
	SOIL-S-2-0.5	10.5	2880	46.67	11	119.5	0.159868	46	75	0.17	220
Offsite	SOIL-OS-1-0.5FT	4.79	3054	445	ND	ND	0.01229	53	78	0.029	210
	SOIL-OS-2-0.5FT	ND	277	81.6	6664.1	173.4	0.00028	150	130	0.11	440
	SOIL-OS-2-0.5FT DUP	2.31	386	43.36	2362.8	121.5	0.03354	43	77	0.08	260
	SOIL-OS-3-0.5FT	2.86	301	30.69	7.5	130.4	ND	30	78	0.093	210
	SOIL-OS-4-0.5FT	ND	ND	ND	ND	ND	ND	12	31	0.057	55
	SOIL-OS-5-0.5ft	ND	ND	19.3	6.1	49.2	0.0111	23	35	0.06	150

Table 5-9
Subsurface Soil Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compound ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
O	SOIL-O-1-6FT	5278000	2884000	211500	27700	3026000	427.6	1500	1200	360	3900
	SOIL-O-2-6FT	1019.3	ND	50	4244	388.7	0.02043	15	12	0.22	48
	SOIL-O-3-6FT	3460.9	434500	31440	45100	400500	0.015278	35	22	20	150
	SOIL-O-3-6FT-DUP	970	132100	3388	12000	195400	0.07249	14	12	0.056	49
P	SOIL-P-1-6FT	43700	8780	429	91.1	500	0.35406	35	110	0.91	280
	SOIL-P-2-6FT		179380	10	1200	764	1.21	52	86	3.2	700
	SOIL-P-3-6FT	9411.7	ND	123	1527	ND	0.00778	30	34	1.6	2900
	SOIL-P-4-6FT	56020	ND	3180	55	2172	0.215	36	130	1.4	200
Q	SOIL-Q-1-6FT	208780	94000	11164	680000	182610	54.89	3800	24000	1.8	11000
	SOIL-Q-2-6FT	44430	50475	510	3812.9	2369	0.3826	120	1100	0.98	730
	SOIL-Q-3-6	4.02	17660	771	13	1147	0.04791	220	500	2.2	520
	SOIL-Q-4-6	4.13	7341	10.3	ND	ND	0.013	28	64	0.099	210
	SOIL-Q-5-6FT	9.31	37101	110.4	2	ND	ND	32	150	0.26	140
	SOIL-Q-6-6	228	1158	78.4	28.6	422	0.00063	150	120	0.11	80
	SOIL-Q-7-6	40788.1	40410	58	698	1629	0.08179	20000	300	0.049	430
	SOIL-Q-8-6	15763.8	44050	93.3	56	1260	0.0258	260	520	0.61	630
	SOIL-Q-8-6-DUP	799.61	26420	60.1	1177	2458	0.0267	190	640	0.92	740

Table 5-9
Subsurface Soil Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compound ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
Q	SOIL-Q-9-6	10.5	17950	1224	564.8	7770	0.0856	520	1600	0.62	2300
	SOIL-Q-10-6	89.12	6482	187.02	ND	1285.9	0.29343	1700	1200	0.49	1900
	SOIL-Q-11-6	4566	51120	6873	240000	9848	28.35	570	1500	36	2100
	SOIL-Q-12-6	3484460	9502	1089.6	410	675	0.00017	21	14	0.021	63
R	SOIL-R-1-6FT	13.27	683	91.3	51634.6	1894.7	0.027	20	17	0.19	74
	SOIL-R-2-6	368.84	30	14.53	85445	1.4	ND	15	9.8	0.047	44
	SOIL-R-3-6FT	1838800	3999	9.79	76319	274.9	ND	130	110	1.1	5900
	SOIL-R-4-6FT	48.33	ND	0.59	36018	ND	ND	14	8.1	0.064	40
S	SOIL-S-1-6FT	5673000	503900	664	4650	39280	25.87	200	2400	2.6	1800
	SOIL-S-2-6FT	1921900	194000	75.6	252.6	154	0.0332	34	1200	0.4	230
Offsite	SOIL-OS-1-6FT	2.38	32	ND	ND	ND	ND	3	5.2	0.0058	25
	SOIL-OS-2-6FT	2.54	ND	ND	ND	ND	ND	11	8.4	0.014	37
	SOIL-OS-2-6FT DUP	9.96	ND	ND	ND	ND	ND	7.7	6.5	0.013	30
	SOIL-OS-3-6FT	4.24	ND	ND	2.9	ND	ND	2.7	4.1	0.0054	19
	SOIL-OS-4-6FT	4.36	ND	0.51	ND	ND	ND	13	9.9	0.022	38
	SOIL-OS-4-6FT-DUP	0.6	ND	ND	ND	ND	0.00032	12	9.3	0.019	37
	SOIL-OS-5-6ft	ND	ND	0.96	ND	ND	ND	6.1	7	0.0066	32

Table 5-10
Air Sampling Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/m^3	Total Semivolatile Organic Compounds ug/m^3	Total Pesticides ug/m^3	Total Herbicides ug/m^3	Total Polychlorinated Biphenyls (PCB) ug/m^3	Total Dioxin TEQs pg/m^3	Total Copper ug/m^3	Total Lead ug/m^3	Total Mercury ug/m^3	Total Zinc ug/m^3
P	AIR-P-1	19.856	0.14	0.000098		0.00098	0.0000616	ND	ND		ND
	AIR-P-2	16.028	0.319	0.000096		ND	0.0061653	ND	ND		ND
	AIR-P-3	20.814	0.191	ND		0.0002	0.0018944	ND	ND		ND
	AIR-P-4	21.153	0.146	0.000323		0.0021	0.0000619	ND	ND		ND
Q	AIR-Q-1	36.865	0.149	0.000193		0.0011	0.008436	ND	ND		ND
	AIR-Q-2	31.96	ND	0.000359		0.00082	0.004464	0.054	0.015		ND
	AIR-Q-3	22.399	ND	0.00011		0.00054	0.006005	ND	0.015		ND
	AIR-Q-4	16.626	0.144	ND		0.00276	0.0101811	0.063	0.015		ND
	AIR-Q-4-DUP							0.063	ND		ND
	AIR-Q-5	19.184	0.182	0.000091		0.009	0.002997	ND	0.016		0.054

Table 5-10
Air Sampling Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/m³	Total Semivolatile Organic Compounds ug/m³	Total Pesticides ug/m³	Total Herbicides ug/m³	Total Polychlorinated Biphenyls (PCB) ug/m³	Total Dioxin TEQs pg/m³	Total Copper ug/m³	Total Lead ug/m³	Total Mercury ug/m³	Total Zinc ug/m³
Q	AIR-Q-6	22.872	0.1	0.000292		0.00098	0.005313	ND	0.013		0.05
	AIR-Q-6-DUP	20.587	0.016	0.00013		0.00129	0.004363				
	AIR-Q-7	13.634	0.084	0.000088		ND	0.0083789	ND	0.011		0.058
	AIR-Q-8	17.518	0.032	0.000099		ND	0.002475	ND	0.012		0.05
R	AIR-R-1	45.186	0.099	ND		0.00098	0.009612	ND	ND		ND
	AIR-R-2	61.525	0.228	ND		0.0042	0.003086	0.05	0.012		ND
	AIR-R-3	71.181	0.35	0.000272		0.002	0.003379	ND	ND		ND
	AIR-R-4	53.373	0.168	0.000084		0.0002	0.002811				
	AIR-R-4-DUP	28.819	0.36	ND		0.00157	0.003024				

Table 5-11
Stormwater Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Date	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q	STORM-Q-1	9/18/2002	35.73	ND	0.0438	1.1	ND	0.000000901	0.016	0.012	0.00036	0.14
	STORM-Q-1-10-3-02	10/3/2002	41	1.5	0.0419	ND	ND	0.00000238	0.017	0.021	0.00015	0.096
	STORM-Q-2	9/18/2002	47.18	ND	0.123	ND	0.032	0.000019032	0.017	0.0073	0.00024	0.15
	STORM-Q-2-10-3-02	10/3/2002	57	1.2	0.0198	401.09	ND	0.000000013	ND	ND	ND	0.087
R	STORM-R-1	9/18/2002	30.3	1.94	0.0461	1.77	ND	0.000002247	0.0096	0.0053	0.00023	0.051
	STORM-R-1-10-3-02	10/3/2002	59.6	5.14	0.0125	59.47	ND	0.0000007285	0.01	0.0094	0.00017	0.071

Table 5-12
Seep Analytical Data
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q	SEEP-Q-1	10.97	ND	0.051	ND	ND	0.0001049	0.023	0.018	ND	0.12
	SEEP-Q-2	ND	ND	ND	ND	ND	ND	0.37	0.33	0.00086	2.2
R	SEEP-R-1	963.1	7289	1.061	172.42	0.18	ND	0.014	0.014	ND	0.057

Table 5-13a
Hydraulic Conductivity (K) of Shallow Piezometers
Sauget Area 2 RI/FS

Piezometer No.	K (ft/min)	K (cm/sec)
PIEZ-3-SHALLOW (IN)	0.003609	1.833E-03
PIEZ-3-SHALLOW (OUT)	0.00919	4.669E-03
PIEZ-5-SHALLOW (IN)	0.0002325	1.181E-04
PIEZ-5-SHALLOW (OUT)	0.0002617	1.329E-04
PIEZ-6-SHALLOW (IN)	0.0005994	3.045E-04
PIEZ-6-SHALLOW (OUT)	0.0006101	3.099E-04
PIEZ-8-SHALLOW (IN)	0.003739	1.899E-03
PIEZ-8-SHALLOW (OUT)	0.00169	8.585E-04
PIEZ-9-SHALLOW (IN)	0.0329	1.671E-02
PIEZ-9-SHALLOW (OUT)	0.0329	1.671E-02
	Average	4.355E-03

Table 5-13b
Hydraulic Conductivity (K) of Medium Piezometers
Sauget Area 2 RI/FS

Piezometer No.	K (ft/min)	K (cm/sec)
PIEZ-1-MIDDLE (IN)	0.07298	3.707E-02
PIEZ-1-MIDDLE (OUT)	0.05243	2.663E-02
PIEZ-2-MIDDLE (IN)	0.06778	3.443E-02
PIEZ-2-MIDDLE (OUT)	0.06778	3.443E-02
PIEZ-3-MIDDLE (IN)	0.05078	2.580E-02
PIEZ-3-MIDDLE (OUT)	0.04632	2.353E-02
PIEZ-4-MIDDLE (IN)	0.08446	4.291E-02
PIEZ-4-MIDDLE (OUT)	0.08446	4.291E-02
PIEZ-5-MIDDLE (IN)	0.06867	3.488E-02
PIEZ-5-MIDDLE (OUT)	0.06582	3.344E-02
PIEZ-6-MIDDLE (IN)	0.06631	3.369E-02
PIEZ-6-MIDDLE (OUT)	0.1274	6.472E-02
PIEZ-7-MIDDLE (IN)	0.07423	3.771E-02
PIEZ-7-MIDDLE (OUT)	0.07423	3.771E-02
PIEZ-8-MIDDLE (IN)	0.0636	3.231E-02
PIEZ-8-MIDDLE (OUT)	0.1713	8.702E-02
	Average	4.473E-02

Table 5-13c
Hydraulic Conductivity (K) of Deep Piezometers
Sauget Area 2 RI/FS

Piezometer No.	K (ft/min)	K (cm/sec)
PIEZ-1-DEEP (IN)	0.07772	3.948E-02
PIEZ-1-DEEP (OUT)	0.01828	9.286E-03
PIEZ-2-DEEP (IN)	0.01734	8.809E-03
PIEZ-2-DEEP (OUT)	0.01734	8.809E-03
PIEZ-3-DEEP (IN)	0.02085	1.059E-02
PIEZ-3-DEEP (OUT)	0.02085	1.059E-02
PIEZ-4-DEEP (IN)	0.03629	1.844E-02
PIEZ-4-DEEP (OUT)	0.03579	1.818E-02
PIEZ-5-DEEP (IN)	0.02239	1.137E-02
PIEZ-5-DEEP (OUT)	0.02239	1.137E-02
PIEZ-6-DEEP (IN)	0.0262	1.331E-02
PIEZ-6-DEEP (OUT)	0.0262	1.331E-02
PIEZ-7-DEEP (IN)	0.06377	3.240E-02
PIEZ-7-DEEP (OUT)	0.04878	2.478E-02
PIEZ-8-DEEP (IN)	0.1748	8.880E-02
PIEZ-8-DEEP (OUT)	0.1748	8.880E-02
PIEZ-9-DEEP (IN)	0.02859	1.452E-02
PIEZ-9-DEEP (OUT)	0.0218	1.107E-02
	Average	3.097E-02

Table 5-13d
Hydraulic Conductivity (K) of Bedrock Wells
Sauget Area 2 RI/FS

Well No.	K (ft/min)	K (cm/sec)
BDRK-O-1(IN)	0.003156	1.603E-03
BDRK-O-1 (OUT)	0.003156	1.603E-03
BDRK-Q-1 (IN)	0.0005269	2.677E-04
BDRK-Q-1 (OUT)	0.0004877	2.478E-04
BDRK-Q-2 (IN)	0.0274	1.392E-02
BDRK-Q-2 (OUT)	0.0274	1.392E-02
BDRK-S-1 (IN)	0.001434	7.285E-04
BDRK-S-1 (OUT)	0.001044	5.304E-04
	Average	4.102E-03

Table 5-14
Sediment Analytical Data-2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
Q (Large	P11S	2926.8	ND	ND	ND	1158.8	0.08907	30	43	0.13	190
	P12S	15.3	ND	57	636.2	175.3		39	53	0.13	240
Mississippi River	R1AD1S	29.4	175	ND	370	ND		12	12	0.065	89
	R1AM1S	98	36	ND	ND	ND		4.8	8.1	0.13	34
	R1AU1S	12	ND	ND	12	ND		0.75	2.7	0.0045	8.2
	R1BD1S	ND	ND	ND	ND	ND		1.4	4.9	ND	ND
	R1BM1S	3.4	ND	ND	486.2	ND	0.0000012	1.1	1.7	0.0035	8.2
	R1BM2S	8.1	ND	ND	19	ND	0.0000035	1.3	1.7	ND	7.2
	R1BU1S	90.2	ND	ND	ND	ND		0.9	1.6	ND	6.7
	R1CM1S	9.3	ND	ND	15	ND		0.61	2.1	ND	7.6
	R2AD1S	48	ND	ND	ND	ND		14	11	0.024	45
	R2AM1S	9.8	178	ND	ND	ND		7.6	10	0.022	40
	R2AM2S	15	153	ND	ND	ND		8.4	11	0.026	41
	R2AU1S	13.6	ND	ND	ND	ND		1.2	4	0.0033	13
	R2BD1S	7.3	ND	ND	ND	ND		2.8	5.8	0.0038	27
	R2BM1S	5.8	ND	1.2	ND	ND	0.0000024	0.88	19	0.0043	10
	R2BU1S	6.3	ND	ND	ND	ND		1.6	4.4	0.0043	ND
	R2CM1S	3.1	ND	ND	ND	ND		0.68	2	ND	8
	R3AD1S	17.2	26	4.17	12.5	5.56		6.4	41	0.0089	260
	R3AM1S	58.6	272	3.1	1018.8	5.7		18	35	0.037	310
	R3AU1S	5069.9	3298	5.39	1.4	2.4		12	47	0.03	310
	R3BD1S	15	ND	2.11	ND	ND		2	11	0.0039	87
	R3BM1S	11060.9	2132	29.87	2888.3	69.4	0.0009206	19	43	0.067	180
	R3BU1S	1318.6	1685	0.97	1.6	ND		2.3	7	0.0048	25

Table 5-14
Sediment Analytical Data-2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/kg	Total Semivolatile Organic Compounds ug/kg	Total Pesticides ug/kg	Total Herbicides ug/kg	Total Polychlorinated Biphenyls (PCB) ug/kg	Total Dioxin TEQs ug/kg	Total Copper mg/kg	Total Lead mg/kg	Total Mercury mg/kg	Total Zinc mg/kg
Mississippi River	R3CM1S	13.6	ND	ND	ND	ND		0.58	1.9	ND	6.7
	R4AD1S	14.4	ND	0.71	ND	ND		ND	7.7	ND	40
	R4AM1S	11.4	ND	1.3	ND	ND		5.6	11	ND	140
	R4AU1S	12.3	ND	1.51	ND	ND		2.5	47	ND	190
	R4BD1S	6.9	66	5.4	ND	ND		ND	4.2	ND	53
	R4BM1S	6.33	ND	ND	ND	8.9	0.0003298	6	11	ND	60
	R4BU1S	13.6	ND	8.68	ND	ND		1.5	18	ND	71
	R4CM1S	14.6	57	3.06	ND	ND		ND	4.1	ND	23
	R4CM2S	19.6	360	3.16	ND	ND		ND	18	ND	14
	R5AM1S	4.1	390	ND	20	ND		4.5	14	0.0038	70
	R5AN1S	293.9	ND	0.51	7.9	ND		3	8.1	0.006	42
	R5AU1S	9.39	ND	1.01	9.2	ND		5.4	18	0.028	59
	R5BM1S	21.88	ND	ND	ND	ND	0.0000047	2.7	6.2	0.016	22
	R5BN1S	33.3	ND	0.65	13	ND		9	15	0.02	97
	R5BU1S	14.02	ND	0.6	ND	ND		4.7	13	0.01	86
	R5CM1S	9.32	ND	ND	2.6	ND		ND	3.4	ND	13
	R6AD1S	41.9	37	1.7	ND	ND		14	20	0.036	110
	R6AM1S	293.5	ND	3.38	ND	ND		14	29	0.067	160
	R6AM2S	133	94	1.95	ND	ND		20	35	0.061	260
	R6AU1S	179.3	ND	2.9	ND	ND		11	39	0.051	210
	R6BM1S	65.5	ND	0.97	ND	ND	0.0001358	3.4	10	0.015	91
	R6BU1S	38.5	65	1.1	ND	ND		7.6	22	0.035	130
	R6CM1S	35.7	ND	ND	ND	ND		ND	3	ND	9.4

Table 5-15
Surface Water Analytical Data-2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Q (Large Pond)	P11W	ND	ND	0.038	ND	ND	0.000004601	0.013	0.014	ND	0.052
	P11W-Filtered							ND	ND	ND	ND
	P12W	ND									
	P12W-Filtered		5.6	0.0168	ND	ND					
Mississippi River	R1AD1W	ND	ND	0.024	ND	ND		ND	ND	ND	ND
	R1AD1W-Filtered							ND	ND	ND	ND
	R1AM1W	ND	ND	ND	ND	ND		ND	ND	ND	ND
	R1AM1W-Filtered							ND	ND	ND	ND
	R1AU1W	ND	ND	0.015	ND	ND		ND	ND	ND	ND
	R1AU1W-Filtered							ND	ND	ND	ND
	R1BD1W	0.5	ND	0.023	ND	ND		ND	ND	ND	ND
	R1BD1W-Filtered							ND	ND	ND	ND
	R1BM1W	ND	ND	0.016	ND	ND	ND	ND	ND	ND	ND
	R1BM1W-Filtered							ND	ND	ND	ND
	R1BM2W	ND	14	0.015	ND	ND	ND	ND	ND	ND	ND
	R1BM2W-Filtered							ND	ND	ND	ND
	R1BU1W	ND	ND	ND	ND	ND		ND	ND	ND	0.0046
	R1BU1W-Filtered							ND	ND	ND	ND
	R1CM1W	ND	ND	0.016	0.3	ND		ND	ND	ND	ND
	R1CM1W-Filtered							ND	ND	ND	ND
	R2AD1W	ND	ND	ND	ND	ND		ND	ND	ND	0.0054
	R2AD1W-Filtered							ND	ND	ND	0.036
	R2AM1W	ND	ND	ND	ND	ND		ND	ND	ND	ND
	R2AM1W-Filtered							ND	ND	ND	ND
	R2AM2W	0.76	ND	ND	ND	ND		ND	ND	ND	0.0061
	R2AM2W-Filtered							ND	ND	ND	0.02
	R2AU1W	ND	ND	ND	ND	ND		ND	ND	ND	ND
	R2AU1W-Filtered							ND	ND	ND	ND
	R2BD1W	ND	ND	ND	ND	ND		ND	ND	ND	0.0044
	R2BD1W-Filtered							ND	ND	ND	ND
	R2BM1W	0.3	ND	ND	ND	ND	ND	ND	0.0036	ND	ND
	R2BM1W-Filtered							ND	ND	ND	ND
	R2BU1W	0.57	ND	0.019	ND	ND		ND	ND	ND	ND

Table 5-15
Surface Water Analytical Data-2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Mississippi River	R2BU1W-Filtered							ND	ND	ND	ND
	R2CM1W	0.69	ND	ND	ND	ND		ND	ND	ND	ND
	R2CM1W-Filtered							ND	ND	ND	ND
	R3AD1W	3.9	25.2	0.0092	4.01	ND		ND	ND	ND	ND
	R3AD1W-Filtered							ND	ND	ND	ND
	R3AM1W	6.65	31.3	ND	5.1	ND		ND	ND	ND	ND
	R3AM1W-Filtered							ND	ND	ND	ND
	R3AU1W	74.41	379.7	ND	33.4	ND		ND	ND	ND	ND
	R3AU1W-Filtered							ND	ND	ND	ND
	R3BD1W	2.87	11.8	ND	2.73	ND		ND	ND	ND	ND
	R3BD1W-Filtered							ND	ND	ND	ND
	R3BM1W	7.04	37.1	0.008	4.69	ND	ND	ND	ND	ND	ND
	R3BM1W-Filtered							ND	ND	ND	ND
	R3BU1W	10.9	15.3	ND	6.17	ND		ND	ND	ND	0.037
	R3BU1W-Filtered							ND	ND	ND	ND
	R3CM1W	0.33	ND	ND	ND	ND		0.039	0.0028	ND	ND
	R3CM1W-Filtered							ND	ND	ND	ND
	R4AD1W	4.5	17.5	ND	3.45	ND		ND	ND	ND	ND
	R4AD1W-Filtered							ND	ND	ND	ND
	R4AM1W	4.51	11.8	ND	3.02	ND		ND	ND	ND	ND
	R4AM1W-Filtered							ND	ND	ND	ND
	R4AU1W	44.76	13.2	ND	3.06	ND		ND	0.0031	ND	ND
	R4AU1W-Filtered							ND	ND	ND	ND
	R4BD1W	2.25	ND	ND	ND	ND		ND	ND	ND	ND
	R4BD1W-Filtered							ND	ND	ND	ND
	R4BM1W	2.8	9.1	ND	2.11	ND	ND	ND	0.0049	ND	ND
	R4BM1W-Filtered							ND	ND	ND	ND
	R4BU1W	3.95	6.3	ND	2.19	ND		ND	ND	ND	0.041
	R4BU1W-Filtered							ND	ND	ND	ND
	R4CM1W	1.6	17	ND	ND	ND		ND	ND	ND	ND
	R4CM1W-Filtered							ND	ND	ND	ND
	R4CM2W	0.54	ND	ND	ND	ND		ND	ND	ND	ND
	R4CM2W-Filtered							ND	ND	ND	ND

Table 5-15
Surface Water Analytical Data-2002
Sauget Area 2 RI/FS

Site	Sample ID	Total Volatile Organic Compounds ug/L	Total Semivolatile Organic Compounds ug/L	Total Pesticides ug/L	Total Herbicides ug/L	Total Polychlorinated Biphenyls (PCB) ug/L	Total Dioxin TEQs ug/L	Total Copper mg/L	Total Lead mg/L	Total Mercury mg/L	Total Zinc mg/L
Mississippi River	R5AD1W	2.41	ND	ND	1.3	ND		ND	ND	ND	0.0059
	R5AD1W-Filtered							ND	ND	0.000094	0.0049
	R5AM1W	1.56	1.8	ND	1.08	ND		ND	ND	0.00014	ND
	R5AM1W-Filtered							ND	ND	0.00012	ND
	R5AN1W	1.9	2.6	0.023	1.8	ND		ND	ND	ND	0.0042
	R5AN1W-Filtered							ND	ND	ND	ND
	R5AU1W	1.68	2.2	ND	1.1	ND		ND	ND	ND	ND
	R5AU1W-Filtered							ND	ND	ND	ND
	R5BD1W	0.88	1.2	ND	0.72	ND		ND	ND	0.0002	ND
	R5BD1W-Filtered							ND	ND	ND	ND
	R5BM1W	1.44	2	ND	85.1	ND	ND	ND	ND	ND	ND
	R5BM1W-Filtered							ND	ND	0.00012	ND
	R5BN1W	3	ND	ND	1.6	ND		ND	ND	ND	0.0039
	R5BN1W-Filtered							ND	ND	ND	ND
	R5BU1W	1.53	2.3	ND	0.94	ND		ND	0.0027	ND	ND
	R5BU1W-Filtered							ND	ND	ND	ND
	R5CM1W	0.55	ND	ND	ND	ND		ND	ND	0.00008	ND
	R5CM1W-Filtered							ND	ND	ND	ND
	R6AD1W	ND	ND	ND	0.71	ND		0.0025	ND	ND	0.0053
	R6AD1W-Filtered							ND	ND	ND	0.0033
	R6AM1W	3.1	ND	ND	1	ND		ND	ND	ND	0.0049
	R6AM1W-Filtered							ND	ND	ND	ND
	R6AM2W	1.71	ND	ND	0.94	ND		ND	ND	ND	0.005
	R6AM2W-Filtered							ND	ND	ND	0.0057
	R6AU1W	1.1	ND	ND	0.93	ND		ND	ND	ND	0.0066
	R6AU1W-Filtered							ND	ND	ND	ND
	R6BM1W	1.49	ND	ND	0.98	ND	ND	ND	ND	ND	0.005
	R6BM1W-Filtered							ND	ND	ND	ND
	R6BU1W	1.2	1	ND	0.88	ND		ND	ND	ND	0.0049
	R6BU1W-Filtered							ND	ND	ND	ND
	R6CM1W	ND	1.7	ND	ND	ND		ND	ND	ND	0.0053
	R6CM1W-Filtered							ND	ND	ND	ND

Table 6-1
Waste Volume Summary
Sauget Area 2 RI/FS

Site	Areal Extent (sq. ft)	Depth (ft)	Total (Cubic Feet)	Total (Cubic Yards)
O North	135,230	12.0	1,622,760	60,102
O	1,222,245	12.0	14,666,940	543,219
O South	185,941	12.0	2,231,292	82,640
P	751,487	22.8	17,133,904	634,588
Q North	2,271,708	12.8	29,077,862	1,076,957
Q Central	2,930,136	16.7	48,933,271	1,812,342
Q South	2,922,826	10.3	30,105,108	1,115,003
Q Ponds	582,268	0.0	0	0
R	1,045,960	22.8	23,847,888	883,254
S	35,684	8.5	303,314	11,234
Totals			167,922,339	6,219,340

Notes:

All dimensions are in feet unless otherwise noted.

Areal extent is estimated by scaling the footprint from the Base Map.

Depths are based on a site average.

Table 6-2a
TCLP Results vs. Total Concentrations in Waste Samples
Site O
Sauget Area 2 RI/FS

Chemical Group	Units	SITE O					
		Waste-O-1		Waste-O-2		Waste-O-3	
		TCLP	Total	TCLP	Total	TCLP	Total
VOCs	mg/l	3.20E+00	5.32E+03	4.95E+00	1.85E+04	1.14E+01	1.57E+03
SVOCs	mg/l	8.82E+00	6.87E+02	7.46E-02	2.04E+00	2.21E+00	3.08E+02
Pesticides	mg/l	ND	6.27E+01	ND	1.27E-01	1.54E-02	1.31E+01
Herbicides	mg/l	3.45E+00	6.30E+01	1.03E+00	2.01E+00	6.60E+00	ND
PCBs	mg/l	6.65E-02	1.62E+03	1.53E-03	1.29E+00	4.54E-02	1.08E+02
Dioxin TEQs	ug/l	3.23E-02	4.97E+02	9.60E-03	1.55E+00	6.16E-01	3.02E+01
Copper	mg/l	1.10E-02	1.11E+03	ND	1.70E+01	ND	2.40E+01
Lead	mg/l	2.40E-01	1.80E+02	ND	9.60E+00	1.90E-02	2.10E+01
Mercury	mg/l	ND	9.20E+01	ND	7.20E-02	ND	1.50E+00
Zinc	mg/l	1.00E+01	7.90E+02	ND	4.70E+01	5.50E+00	1.30E+02

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-2b
TCLP Results vs. Total Concentrations in Waste Samples
Site P
Sauget Area 2 RI/FS

Chemical Group	Units	SITE P							
		Waste-P-1		Waste-P-2		Waste-P-3		Waste-P-4	
		TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total
VOCs	mg/l	5.50E-01	3.46E+01	3.22E-01	1.62E+02	1.26E+00	4.65E+02	4.85E-01	3.84E+01
SVOCs	mg/l	2.30E-01	2.66E+00	3.54E+00	8.92E+01	1.32E+00	8.73E+01	1.17E-01	1.25E+01
Pesticides	mg/l	ND	3.79E-01	6.80E-04	2.02E-01	ND	1.46E+00	ND	1.30E+00
Herbicides	mg/l	1.00E-01	1.34E+01	4.00E-02	1.90E+00	5.56E-01	2.12E+02	2.90E-02	1.54E-01
PCBs	mg/l	ND	2.68E+01	ND	6.10E-01	ND	3.10E-01	2.20E-04	5.55E+00
Dioxin TEQ	ug/l	ND	3.31E-01	ND	1.84E-01	ND	3.21E-02	ND	2.00E-03
Copper	mg/l	ND	7.50E+00	ND	1.84E-01	ND	2.70E+02	ND	2.20E+02
Lead	mg/l	ND	8.40E+00	ND	9.90E+01	ND	2.50E+02	2.90E-02	1.30E+02
Mercury	mg/l	ND	1.50E+01	ND	1.90E+01	ND	5.60E+00	ND	1.20E+00
Zinc	mg/l	3.80E-01	1.00E+02	4.20E+00	1.20E+03	7.40E+01	4.70E+03	1.00E+00	4.10E+02

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-2c
TCLP Results vs. Total Concentrations in Waste Samples
Site Q
Sauget Area 2 RI/FS

Chemical Group	Units	SITE Q											
		Waste-Q-1		Waste-Q-2		Waste-Q-3		Waste-Q-4		Waste-Q-5		Waste-Q-6	
		TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total
VOCs	mg/l	5.70E-02	1.58E-01	2.52E+00	3.75E+02	4.59E-02	8.43E-03	1.40E-02	6.32E-02	9.60E-03	2.14E-02	4.00E-01	1.44E+01
SVOCs	mg/l	3.28E+01	3.89E+02	2.99E+00	5.19E+01	7.40E-03	2.21E+01	2.80E-03	6.35E+00	ND	3.09E+01	1.41E-01	7.72E+01
Pesticides	mg/l	ND	4.75E+00	ND	9.70E+00	ND	4.19E-01	ND	7.00E-02	ND	1.07E-01	ND	4.10E-01
Herbicides	mg/l	8.71E+00	4.00E+02	1.30E+00	1.80E+02	ND	3.13E-01	ND	ND	ND	3.00E-02	3.10E-01	1.20E+01
PCBs	mg/l	2.00E-03	1.19E+02	8.30E-04	1.16E+02	ND	1.76E+00	ND	3.24E-02	ND	1.09E-02	ND	4.13E+00
Dioxin TEQ	ug/l	ND	9.08E-01	2.47E-02	1.14E+01	ND	2.84E-02	ND	8.36E+00	ND	5.15E-02	ND	1.10E+01
Copper	mg/l	ND	5.20E+02	ND	3.90E+02	ND	5.00E+01	ND	8.10E+01	ND	7.80E+01	ND	6.40E+01
Lead	mg/l	4.10E-02	1.40E+03	1.40E-01	3.80E+02	5.10E-02	2.00E+02	ND	2.30E+02	3.50E-01	3.40E+02	5.60E-02	8.50E+01
Mercury	mg/l	ND	1.10E+00	ND	1.50E+01	ND	7.20E-01	ND	5.60E-01	ND	1.50E-01	ND	2.10E+00
Zinc	mg/l	5.00E+00	1.80E+03	1.10E+01	1.80E+03	1.60E+00	2.20E+02	5.80E-01	4.00E+02	1.10E+00	2.70E+02	3.40E+00	2.70E+02

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-2c
TCLP Results vs. Total Concentrations in Waste Samples
Site Q
Sauget Area 2 RI/FS

Chemical Group	Units	SITE Q											
		Waste-Q-7		Waste-Q-8		Waste-Q-9		Waste-Q-10		Waste-Q-11		Waste-Q-12	
		TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total
VOCs	mg/l	3.77E-01	2.08E+00	1.66E-01	1.83E+01	8.60E-03	2.36E-03	1.18E-02	2.35E-02	2.34E-01	8.81E+00	8.54E-02	2.54E-02
SVOCs	mg/l	1.23E-02	2.49E+00	5.48E-02	1.94E+00	2.73E-01	9.03E+00	ND	2.51E+00	1.22E-01	4.01E+01	ND	9.32E+00
Pesticides	mg/l	ND	5.68E-01	ND	3.86E-02	ND	1.65E+00	ND	7.06E-02	ND	1.82E+00	ND	1.26E+01
Herbicides	mg/l	ND	1.93E-02	1.00E-02	1.40E+00	1.10E-01	8.30E-01	1.70E-02	1.50E+00	1.30E+00	4.70E+02	4.80E-02	6.30E-02
PCBs	mg/l	ND	4.35E+00	ND	ND	ND	3.18E+01	ND	4.98E-01	ND	ND	ND	2.77E+01
Dioxin TEQ	ug/l	ND	2.41E-01	ND	ND	ND	1.56E+00	ND	1.64E+00	ND	8.18E-01	ND	1.08E+00
Copper	mg/l	ND	4.60E+01	ND	2.60E+01	3.80E-01	1.00E+03	4.60E+00	4.60E+03	ND	6.60E+02	1.50E-01	3.51E+02
Lead	mg/l	2.00E-02	4.40E+01	3.60E-02	1.10E+02	8.20E-01	2.30E+03	2.40E+00	2.60E+00	1.20E+00	1.10E+03	3.60E-01	7.70E+02
Mercury	mg/l	ND	1.00E+00	ND	1.80E+00	ND	9.60E-01	ND	3.10E-01	2.80E+01	5.10E+00	ND	3.20E-01
Zinc	mg/l	4.80E+00	2.50E+02	9.10E-01	1.20E+02	2.50E+01	6.40E+03	1.80E+01	2.30E+03	28	3.30E+03	6.90E+00	1.20E+03

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-2d
TCLP Results vs. Total Concentrations in Waste Samples
Site R
Sauget Area 2 RI/FS

Chemical Group	Units	SITE R							
		Waste-R-1		Waste-R-2		Waste-R-3		Waste-R-4	
		TCLP	Total	TCLP	Total	TCLP	Total	TCLP	Total
VOCs	mg/l	3.85E+00	4.34E+03	1.20E+01	1.08E+03	2.08E+02	4.53E+03	5.55E+00	5.71E+02
SVOCs	mg/l	3.02E+01	5.86E+02	1.60E+02	5.81E+03	9.05E+01	4.52E+02	8.54E+00	2.92E+02
Pesticides	mg/l	1.80E-03	7.00E-01	8.00E-04	8.28E+00	1.29E-02	1.03E+01	4.90E-03	1.10E-01
Herbicides	mg/l	1.80E+01	1.72E+02	2.46E+01	6.19E+02	8.08E-01	6.02E+01	1.97E-01	7.29E+00
PCBs	mg/l	ND	6.07E+00	9.40E-04	2.65E+02	1.00E-03	2.09E+02	ND	1.22E+01
Dioxin TEQ	ug/l	5.80E-03	3.85E-01	3.00E-03	1.20E+01	ND	1.50E+00	ND	7.08E-01
Copper	mg/l	1.60E-01	1.10E+02	1.00E-01	5.40E+01	ND	1.40E+01	ND	2.00E+00
Lead	mg/l	5.70E-02	1.60E+01	3.20E-02	9.90E+00	ND	1.80E+01	ND	1.20E+01
Mercury	mg/l	ND	1.70E-01	ND	2.60E+00	ND	3.00E+03	ND	2.00E+00
Zinc	mg/l	7.00E-01	9.80E+01	7.30E-01	1.00E+02	1.10E+01	1.00E+03	1.50E-01	3.00E+01

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-2e
TCLP Results vs. Total Concentrations in Waste Samples
Site S
Sauget Area 2 RI/FS

Chemical Group	Units	SITE S			
		Waste-S-1		Waste-S-2	
		TCLP	Total	TCLP	Total
VOCs	mg/l	5.40E+01	1.62E+04	9.47E+01	6.22E+02
SVOCs	mg/l	6.12E+00	1.05E+02	2.63E+00	2.28E+02
Pesticides	mg/l	2.67E-03	2.42E+00	1.18E-03	3.13E-01
Herbicides	mg/l	1.89E+00	ND	ND	1.50E-02
PCBs	mg/l	2.80E-04	4.59E+00	ND	1.57E-01
Dioxin TEQ	ug/l	ND	9.00E+00	ND	3.31E-03
Copper	mg/l	ND	7.10E+01	ND	4.00E+01
Lead	mg/l	ND	8.20E+02	1.10E-01	4.70E+02
Mercury	mg/l	ND	6.20E-01	ND	2.60E-01
Zinc	mg/l	ND	2.20E+02	7.10E-01	1.30E+02

Note: VOC and Dioxin analyses based on discrete samples; other analyses based on composite samples.

Table 6-3
TCLP Results Comparison
Exceedances of RCRA Limit
Sauget Area 2 RI/FS

Location ID	Chemical	UNITS	Result	Qualifier Code	TC Reg Level	WasteCode
Waste-O-2	Benzene	mg/l	0.67		0.5	**D018**
Waste-O-3	Benzene	mg/l	3.3		0.5	**D018**
Waste-Q-1	2,4,6-Trichlorophenol	mg/l	3.8		2	**D042**
Waste-R-1	2,4-D	mg/l	18	J	10	**D016**
	Nitrobenzene	mg/l	3.2		2	**D036**
Waste-R-2	1,2-Dichloroethane	mg/l	2.1		0.5	**D028**
	Benzene	mg/l	1.4		0.5	**D018**
	2,4,6-Trichlorophenol	mg/l	12		2	**D042**
	2,4-D	mg/l	23	J	10	**D016**
Waste-R-3	1,2-Dichloroethane	mg/l	24		0.5	**D028**
	Benzene	mg/l	14		0.5	**D018**
	Tetrachloroethylene	mg/l	12		0.7	**D039**
	Trichloroethylene	mg/l	74		0.5	**D040**
Waste-R-4	2,4,6-Trichlorophenol	mg/l	2.9		2	**D042**
Waste-S-1	Trichloroethylene	mg/l	0.58		0.5	**D040**
Waste-S-2	Tetrachloroethylene	mg/l	0.76		0.7	**D039**
Waste-S-2	Trichloroethylene	mg/l	0.72		0.5	**D040**

Note:
No exceedances at Waste-O-1, Site P samples, and Waste-Q-2 through Q-12
TC Regulatory Level-RCRA Hazardous Waste Maximum Concentrations of Contaminants for the Toxicity Characteristic

Table 9-1
Evaluation of Remedial Action Alternatives For Site O and O North
Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative is not protective of human health or the environment. No action would be taken to minimize potential exposure to impacted soils at Site O and O North. In addition, no action would be taken to minimize infiltration of surface water into the area. As identified in the human health and ecological risk assessments, risks are present above acceptable ranges for potential future construction workers (utilities) and trespassing teenagers through direct contact with contaminated soil. These risks and the remedial action objectives developed for the site (Section 9.1) would not be addressed by this alternative. This alternative would not however, disturb the contaminated material at the site and release COCs to the environment.	2
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would not meet the ARARs for disposal of hazardous waste and PCB containing wastes.	3
Short-Term Effectiveness (balancing criteria)	This alternative would not present short-term risks to remedial construction workers or to the community. This alternative would not include short-term risks associated with excavation of very large volumes of contaminated soil containing VOCs which could be very significant. In the short-term, environmental impact from this alternative would be less than intrusive remedial actions but the remedial action objectives would not be achieved.	2
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint but is not likely to be acceptable to the regulatory agencies and/or the public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at protecting human health and the environment, or meeting the remedial action objectives for the site. The risks to human health and the environment would not be mitigated by this alternative.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	No reduction of the toxicity, mobility, or volume would occur except that which may occur through natural attenuation. Due to the nature and extent of contamination at the site, this would not likely result in a significant reduction in the toxicity, mobility, or volume of COCs.	3
Cost (balancing criteria)	There is no cost associated with this alternative.	1
Cumulative Score for this Alternative		**15**

Table 9-2
Evaluation of Remedial Action Alternatives For Site O and O North
Alternative 2 – Install a RCRA Cap

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by capping the site with a RCRA cap to minimize exposure to impacted soils and limiting the infiltration of surface water. The Site would be capped and fenced to limit access and to control any future excavation or trespassing on these sites which would be protective of human health by minimizing risks identified in the risk assessment. Installing a RCRA cap would be protective of the environment by minimizing infiltration of surface water, thereby limiting generation of leachate from the site and minimizing this potential source to groundwater. Installing a cap would also effectively eliminate erosion of soil containing COCs. By reducing exposure, significantly reducing surface water infiltration and erosion, this alternative would be protective of human health and the environment by directly addressing risks identified in the risk assessment for the site. These risks included future construction/utility workers and outdoor industrial workers. This alternative would also be protective of potential ecological receptors by eliminating potential exposure routes. Alternative 2 would be protective of future construction/utility workers and outdoor industrial workers as well as trespassing teenagers.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with most of the identified ARARs but may not address all requirements for hazardous waste disposal.	2
Short-Term Effectiveness (balancing criteria)	Alternative 2 involves minimal short-term risks to remediation workers, workers in the area or the general public. The cap or cover installation process involves routine construction and site health and safety risks which can be easily managed. Disturbance and exposure to impacted soils will be minimal during construction of caps or covers over the site. Short-term risks to the public would be low since disturbance of impacted soil and the potential release of COCs into the environment would be minimal.	1
Implementability (balancing criteria)	This alternative is implementable at the site. Installing a RCRA cap is a well-established technology that utilizes readily available equipment, materials, and labor. A significant amount of soil and geosynthetic materials would be required if the entire site were capped. The size of the project may require staggering with the other SA2 projects to spread them out over a period of time to alleviate supply, labor and traffic issues. In addition, cover design may be impacted by the size and shape of the site, topography and the presence of railroad tracks and roads near the site. Capping is a conditional remedy for closed landfills under CERCLA and is often accepted by regulatory agencies and the public.	2

Table 9-2
Evaluation of Remedial Action Alternatives For Site O and O North
Alternative 2 – Install a RCRA Cap
(Continued)

		Ranking
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be effective in the long-term at meeting the remedial action objectives for the site but long-term inspection and maintenance would be required to maintain the integrity of the cap and fence. The cap and cover maintenance would be critical to the long-term success of this alternative as well as institutional controls and deed restrictions. Many landfills across the country have been effectively closed utilizing a RCRA cap or engineered cover.	2
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would not reduce the toxicity or volume through treatment. The alternative would reduce the mobility of contaminants by controlling erosion of impacted soils, and limiting infiltration of water through the contents of the Site. This would reduce the potential source to groundwater from the material present at the Site.	2
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-25. Estimated Capital Cost: $7.5 million Estimated Annual Operation and Maintenance Cost: 23,000 Estimated 30 Year Present Worth Cost: $7.8 million	2
Cumulative Score for this Alternative		**12**

Table 9-3
Evaluation of Remedial Action Alternatives For Site O and O North
Alternative 3 – Excavation and Off-Site Disposal

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would not be protective of human health or the environment. The volume of soil that would require excavation, transportation and disposal is approximately 815,000 cubic yards (loose). This material would be from areas where known hazardous waste is present and where significant quantities of COCs could be released to the environment during excavation This massive excavation project would also require the consumption of a large volume of fuel and would result in releases of air pollutants from transport and excavation vehicles. To transport this amount of soil, even a short distance to a nearby incinerator or landfill, would require an estimated 58,000 truckloads which would potentially overload and damage roadways in the area and cause significant environmental impact during the project. Incineration of an estimated 204,000 cubic yards of soil at one incinerator is also not likely feasible and several incinerators would likely be necessary. Placing 692,000 cubic yards of contaminated soil in one or more off-site hazardous waste landfills would be very difficult and would likely be beyond the capacity of available commercial disposal sites. Although removal of the material at Site O and O North would be protective when complete, the impact to the environment during the project would be very significant.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative, if implementable, would comply with ARARs for removal, treatment, and off-site disposal of hazardous waste.	1
Short-Term Effectiveness (balancing criteria)	The short-term impacts at the site to construction workers, local roads, local air quality, and the overall community would be significant. Excavation of 815,000 cubic yards of soil and transportation of contaminated soil would create health hazards to on-site workers and could cause the release of significant amounts of COCs to the environment. This would also be very disruptive to day-to-day commercial operations in the area. The long period of time required to complete the removal would also raise the likelihood that very heavy rain events and flooding would occur during the project. Significant stormwater runoff problems would likely occur during excavation and on-site treatment of this amount of soil. As discussed previously, the site and area around it would be significantly impacted by the large number of truckloads required to move the contaminated soil off-site and to backfill and restore excavated areas. The short-term impacts of this alternative are likely to be significant and would require tremendous cost and effort to manage.	3
Implementability (balancing criteria)	This alternative is not implementable at the site. With an estimated volume of 603,000 cubic yards, the excavated volume of loose soil would be approximately 815,000 yards of contaminated soil and waste material. With an estimated daily production rate of 500	3

Table 9-3
Evaluation of Remedial Action Alternatives For Site O
Alternative 3 – Excavation and Disposal
(Continued)

		Ranking
	cubic yards per day, the project would take over 4 years of continuous excavation. Cold and/or wet weather would preclude working during periods of the year extending project duration. Disposal capacity for this much waste would likely require disposal at numerous off-site facilities. The presence of dioxin related compounds in soils at Site O would potentially severely impact the off-site disposal options for soils removed form the site. USEPA has also indicated that at sites with more than 100,000 cubic yards of waste material it is typically not practical to excavate them (USEPA, 1996). With an in-place estimated volume of 603,000 cubic yards, excavation of this site is not practical. These volumes of hazardous waste material would also significantly impact the hazardous waste disposal capacity in the region and adequate disposal capacity for this volume of material is not likely available. Based on these challenges, this alternative is not realistically implementable at the site.	
Long-Term Effectiveness and Permanence (balancing criteria)	If this alternative were implementable, it would be effective in the long-term at meeting the remedial action objectives and addressing the risks identified at the site. Excavation, treatment and off-site disposal would be a permanent solution at Site O if it were implementable.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would result in the treatment of an estimated 408,000 yards of material and would reduce the toxicity, mobility, and volume of contaminants from those materials. However, the process of excavation of this area would likely result in the release of significant quantities of COCs into the environment.	1
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-27. Estimated Capital Cost: $562 million Estimated Annual Operation and Maintenance Cost: $0 Estimated 30 Year Present Worth Cost: $562 million	3
Cumulative Score for this Alternative		**15**

Table 9-4
Evaluation of Remedial Action Alternatives For Site Q North
Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative is not protective of human health or the environment. No action would be taken to minimize potential exposure to impacted soils at Site Q North. In addition, no action would be taken to minimize infiltration of surface water into the area. As identified in the human health assessment, risks are present above acceptable ranges for potential future construction/utility workers through direct contact with leachate at the site. These risks, and the remedial action objectives developed for the site (Section 9.1), would not be addressed by this alternative. This alternative, however, would not, however, disturb the contaminated material at the site and release COCs to the environment.	2
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would not meet the ARARs for disposal of hazardous waste and PCB containing wastes.	3
Short-Term Effectiveness (balancing criteria)	This alternative would not present short-term risks to remedial construction workers or to the community. This alternative would not include short-term risks associated with excavation of very large volumes of contaminated soil containing VOCs which could be very significant. In the short-term, environmental impact from this alternative would be less than intrusive remedial actions but the remedial action objectives would not be achieved.	2
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint but is not likely to be acceptable to the regulatory agencies and public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at protecting human health and the environment, or meeting the remedial action objectives for the site. The risks to human health and the environment would not be mitigated by this alternative.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	No reduction of the toxicity, mobility, or volume would occur except that which occurs through natural attenuation. Due to the nature and extent of contamination at the site this would not likely result in a significant reduction in the volume, toxicity, or mobility of COCs.	3
Cost (balancing criteria)	There is no cost associated with this alternative.	1
Cumulative Score for this Alternative		**15**

Table 9-5
Evaluation of Remedial Action Alternatives For Site Q North
Alternative 2 – Install a RCRA Cap

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by capping the site with a RCRA cap to minimize exposure to impacted soils and minimize the infiltration of surface water through the area. The site would be capped and fenced to limit access and to control any future excavation or trespassing on the site which would be protective of human health by minimizing risks identified in the risk assessment for the site. Installing a RCRA cap would also be protective of the environment by minimizing infiltration of surface water, thereby, limiting generation of leachate from the site and minimizing this potential source to groundwater. Installing a cap would also effectively eliminate erosion of soil containing COCs from the site. By reducing exposure, significantly reducing surface water infiltration and erosion, this alternative would be protective of human health and the environment by directly addressing risks identified in the risk assessment for the site. These risks included future construction/utility workers and outdoor industrial workers. This alternative would be protective of future construction/utility workers and outdoor industrial workers.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with most of the identified ARARs but may not address all requirements for hazardous waste disposal.	2
Short-Term Effectiveness (balancing criteria)	This alternative involves minimal short-term risks to remediation workers, workers in the area or the general public. The cap or cover installation process involves routine construction and site health and safety risks can be easily managed. Disturbance and exposure to impacted soils will be minimal during construction of caps or covers over the site. Short-term risks to the public would be low since disturbance of impacted soil and the potential release of COCs into the environment would be minimal.	1
Implementability (balancing criteria)	This alternative is implementable at the site. Installing a RCRA cap is a well-established technology that utilizes readily available equipment, materials, and labor. A significant amount of soil and geosynthetic materials would be required if the entire site were capped. The size of the project may require staggering with the other SA2 projects to spread them out over a period of time to alleviate supply, labor and traffic issues. In addition, the cover design and construction may be impacted by the size, shape of the site, topography and the presence of railroad tracks, the flood control levee, and other features near the site. Capping is a conditional remedy for closed landfills under CERCLA and is often accepted by regulatory agencies and the public.	2
Long-Term Effectiveness and	This alternative would be effective in the long-term at meeting the remedial action	2

Table 9-5
Evaluation of Remedial Action Alternatives For Site Q North
Alternative 2 – Cap or Cover Fill Area Sites
(Continued)

		Ranking
Permanence (balancing criteria)	objectives for the site but long-term inspection and maintenance would be required to maintain the integrity of the cap and fence. The cap maintenance would be critical to the long-term success of this alternative as well as institutional controls and deed restrictions. Many landfills across the country have been effectively closed utilizing a RCRA cap or engineered soil cover.	
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would not reduce the toxicity or volume through treatment. The alternative would reduce the mobility of contaminants by controlling erosion of impacted soils, and limiting infiltration of surface water through the contents of the Site. This would reduce the potential source to groundwater from the material present at the Site.	2
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-26. Estimated Capital Cost: $11.5 million Estimated Annual Operation and Maintenance Cost: $604,000 Estimated 30 Year Present Worth Cost: $12 million	2
Cumulative Score for this Alternative		**12**

Table 9-6
Evaluation of Remedial Action Alternatives For Site Q North
Alternative 3 – Excavation and Off-Site Disposal

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would not be protective of human health or the environment. The volume of soil that would require excavation, transportation and disposal approaches 1.5 million cubic yards (loose). This material would be from areas where known hazardous waste is present and that significant quantities of COCs could be released to the environment during excavation. This massive excavation project would also require the consumption of a large amount of fuel and would result in releases of air pollutants from transport and excavation vehicles. To transport this amount of soil, even a short distance to a nearby incinerator or landfill, would require an estimated 107,000 truckloads which would potentially overload and damage roadways in the area and cause significant environmental impact during the project. Incineration of an estimated 363,000 cubic yards of soil at one incinerator is also not likely feasible and several incinerators would likely be necessary. Placing an additional 1.3 million cubic yards of contaminated soil in one or more off-site hazardous waste landfills would be very difficult and would likely be beyond the capacity of available commercial disposal sites. Site Q North would be protective when completed, the impact to the environment during the project would be very significant.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	If this alternative was implementable, it would comply with ARARs for removal, treatment, and off-site disposal of hazardous waste.	1
Short-Term Effectiveness (balancing criteria)	The short-term impacts at the site to construction workers, local roads, local air pollution, and the overall community could be significant. Excavation of as much as 1.5 million cubic yards and transportation of contaminated soil could create potential health hazards to on-site workers and could cause the release of significant amounts of COCs to the environment. This would also be very disruptive to day-to-day commercial operations in the entire area. The long period of time required to complete the removal would also raise the likelihood that very heavy rain events and flooding would occur during the project. Significant stormwater runoff problems would likely occur during excavation and on-site treatment of this amount of soil. As discussed previously, the site and area around it would be significantly impacted by the large number of truckloads required to move the contaminated soil off-site and to backfill and restore excavated areas. The short-term impacts of this alternative are likely to be significant and would require tremendous cost and effort to manage.	3
Implementability (balancing criteria)	This alternative is not implementable at the site. With an estimated in-place volume of 1.1 million cubic yards, the excavated volume of loose soil would be approximately 1. 5	3

Table 9-6
Evaluation of Remedial Action Alternatives For Site Q North
Alternative 3 – Excavation and Off-Site Disposal
(Continued)

		Ranking
	million cubic yards of contaminated soil and waste. With an estimated production rate of 500 cubic yards per day, the project would take over eight years of continuous excavation to complete. Cold and/or wet weather would preclude working during periods of the year extending project duration. Disposal capacity for this much waste would likely require disposal at numerous off-site facilities. The presence of dioxin related compounds in soils at Site O would potentially severely impact the off-site disposal options for soils removed from the site. USEPA has also indicated that at sites with more than 100,000 cubic yards of waste material it is typically not practical to excavate them (USEPA, 1996). With an in-place estimated volume of 1.1 million cubic yards, excavation of this site is not practical. This volume of hazardous waste material would also significantly impact the hazardous waste disposal capacity in the region and adequate disposal capacity for this volume of material is not likely available. Based on these challenges, this alternative is not realistically implementable at the site.	
Long-Term Effectiveness and Permanence (balancing criteria)	If this alternative were implementable, it would be effective in the long-term at meeting the remedial action objectives and addressing the risks identified at the site. Excavation, treatment and off-site disposal would be a permanent solution at Site O if it were implementable.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would result in treatment of an estimated 727,000 cubic yards of material and would reduce the toxicity, mobility, and volume of contaminants from those materials. However, the process of excavation of this area would likely result in the mobilization of significant quantities of COCs into the environment.	1
Cost (balancing criteria)	The cost estimated for this alternative is presented in Table 9-27. Estimated Capital Cost: $1.0 Billion Estimated Annual Operation and Maintenance Cost: $0 Estimated 30 Year Present Worth Cost: $1.0 Billion	3
Cumulative Score for this Alternative		**15**

Table 9-7
Evaluation of Remedial Action Alternatives For Site R
Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative is not protective of human health or the environment. No action would be taken to minimize potential exposure to impacted soils at Site R. In addition, no action would be taken to minimize infiltration of surface water at the site. As identified in the human health risk assessment, risks are present above acceptable ranges for potential future construction/utility workers, and outdoor industrial workers from site soils and leachate containing COCs. These risks and the remedial action objectives developed for the site (Section 9.1) would not be addressed by this alternative. This alternative would not, however, disturb the contaminated material at the site and release COCs to the environment.	2
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would not meet the ARARs for disposal of hazardous waste and PCB containing wastes.	3
Short-Term Effectiveness (balancing criteria)	This alternative would not present short-term risks to remedial construction workers or to the community. This alternative would not include short-term risks associated with excavation of very large volumes of contaminated soil containing VOCs which could be very significant. In the short-term, environmental impact from this alternative would be less than intrusive remedial actions but the remedial action objectives would not be achieved.	2
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint but is not likely to be acceptable to the regulatory agency and public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at protecting human health and the environment, or meeting the remedial action objectives for the site. The risks to human health and the environment identified at Site R would not be mitigated by this alternative.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	No reduction of the toxicity, mobility, or volume would occur except that which occurs through natural attenuation. Due to the nature and extent of contamination at the site, this would not likely result in a significant reduction in the toxicity, mobility, or volume of COCs.	3
Cost (balancing criteria)	There is no cost associated with this alternative.	1
Cumulative Score for this Alternative		**15**

Table 9-8
Evaluation of Remedial Action Alternatives For Site R
Alternative 2 – Install a RCRA cap

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by capping the site with a RCRA cap to minimize exposure to impacted soils and minimize the infiltration of surface water through the area. The site would be capped and fenced to limit access and to control any future excavation or trespassing which would be protective of human health by minimizing risks identified in the risk assessment. Installing a RCRA cap would also be protective of the environment by minimizing infiltration of surface water, thereby, limiting generation of leachate from the site. Installing a cap would also effectively eliminate erosion of soil containing COCs from the site. By reducing exposure, significantly reducing surface water infiltration and erosion, this alternative would be protective of human health and the environment by directly addressing risks identified in the risk assessment for the site. These risks included future construction/utility workers and outdoor industrial workers. This alternative would be protective of future construction/utility workers and outdoor industrial workers.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with most of the identified ARARs but may not address all requirements for hazardous waste disposal.	2
Short-Term Effectiveness (balancing criteria)	This alternative involves minimal short-term risks to remediation workers, workers in the area or the general public. The cap or cover installation process involves routine construction and site health and safety risks that can be easily managed. Disturbance and exposure to impacted soils will be minimal during construction of caps or covers over the site. Short-term risks to the public would be low since disturbance of impacted soil and the potential release of COCs into the environment would be minimal.	1
Implementability (balancing criteria)	This alternative is implementable at the site. Installing a RCRA cap is a well-established technology that utilizes readily available equipment, materials, and labor. A significant amount of soil and geosynthetic materials would be required if the entire site were capped. The size of the project would likely require staggering with the other SA2 projects to spread them out over a period of time to alleviate supply, labor and traffic issues. In addition, the cover design may be impacted by the size and shape of the site, topography and the presence of the flood control levee, and roads near the site. Site R is also on the river side of the flood control levee and the design will need to address its location within the Mississippi River floodplain. Capping is a conditional remedy for closed landfills under CERCLA and is often accepted by regulatory agencies and the public.	2

Table 9-8
Evaluation of Remedial Action Alternatives For Site R
Alternative 2 – Cap or Cover Fill Area Sites
(Continued)

		Ranking
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be effective in the long-term at meeting the remedial action objectives for the site but long-term inspection and maintenance would be required to maintain the integrity of the cap and fence. Maintenance of the cap would be critical to the long-term success of this alternative as well as institutional controls and deed restrictions. Many landfills across the country have been effectively closed utilizing a RCRA cap.	2
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would not reduce the toxicity or volume through treatment. The alternative would reduce the mobility of contaminants by controlling erosion of impacted soils, and limiting infiltration of surface water through the contents of the Site. This would reduce the potential source to groundwater from the material present at the site.	2
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-25. Estimated Capital Cost: $6.5 million Estimated Annual Operation and Maintenance Cost: $24,000 Estimated 30 Year Present Worth Cost: $6.7 million	2
Cumulative Score for this Alternative		**12**

Table 9-9
Evaluation of Remedial Action Alternatives For Site R
Alternative 3 – Excavation and Off-Site Disposal

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would not be protective of human health or the environment. The volume of soil that would require excavation, transportation and disposal approaches 1.2 million cubic yards (loose). This material would be from areas where known hazardous waste is present and where significant quantities of COCs could be released to the environment during excavation. This massive excavation project would also require the consumption of a large volume of fuel and would result in releases of air pollutants from transport and excavation vehicles. To transport this amount of soil, even a short distance to a nearby incinerator or landfill, would require an estimated 93,000 truckloads which would potentially overload and damage roadways in the area and cause significant environmental impact during the project. Incineration of an estimated 298,000 cubic yards of soil at one incinerator is also not likely feasible and several incinerators would likely be necessary. Placing an additional 1.1 million cubic yards of contaminated soil in one or more off-site hazardous waste landfills would be very difficult and would likely be beyond the capacity of available commercial disposal sites. Although removal of the material at Site R would be protective when completed, the impact to the environment during the project would be very significant.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative, if implementable, would comply with ARARs for removal, treatment and off-site disposal of hazardous waste.	1
Short-Term Effectiveness (balancing criteria)	The short-term impacts at the site to construction workers, local roads, local air pollution, and the overall community could be significant. Excavation of as much as 1.2 million cubic yards (in place) and transportation of contaminated soil could create potential health hazards to on-site workers and could cause the release of significant amounts of COCs to the environment. This would also be very disruptive day-to-day to commercial operations in the entire area. The long period of time required to complete the removal would also raise the likelihood that very heavy rain events and flooding would occur during the project and cause the release of contaminated soil into the river. Significant stormwater runoff problems would likely occur during excavation and on-site treatment of this amount of soil near the Mississippi River. As discussed previously, the site and area around it would be significantly impacted by the large number of truckloads required to move the contaminated soil off-site and to backfill and restore excavated areas. The short-term impacts of this alternative are likely to be significant and would require tremendous cost and effort to manage.	3

Table 9-9
Evaluation of Remedial Action Alternatives For Site R
Alternative 3 – Excavation and On-Site or Off-Site Disposal
(Continued)

		Ranking
Implementability (balancing criteria)	This alternative is not implementable at the site. With an estimated in-place volume of 884,000 cubic yards, the excavated volume of loose soil would be approximately 1.2 million cubic yards of contaminated soil and waste. With an estimated excavation production rate of 500 cubic yards per day, the project would take over seven years of continuous excavation. Cold and/or wet weather would preclude working during periods of the year and would extend the project duration. Disposal capacity for this much waste would likely require disposal at numerous off-site facilities. The presence of dioxin related compounds in soils at Site O would potentially severely impact the off-site disposal options for soils removed form the site. USEPA has also indicated that at sites with more than 100,000 cubic yards of waste material it is typically not practical to excavate them (USEPA, 1996). With an in-place estimated volume of 884,000 cubic yards, excavation of this site is not practical. These volumes of hazardous waste material would also significantly impact the hazardous waste disposal capacity in the region and adequate disposal capacity for this volume of material is not likely available Based on these challenges, this alternative is not realistically implementable at the site.	3
Long-Term Effectiveness and Permanence (balancing criteria)	If this alternative were implementable, it would be effective in the long-term at meeting the remedial action objectives and addressing the risks identified at the site. Excavation, treatment and off-site disposal would be permanent solutions at Site O if it were implementable.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would result in treatment of an estimated 596,000 cubic yards of material and would reduce the toxicity, mobility, and volume of contaminants from those materials. However, the process of excavation of this area would likely result in the mobilization of significant quantities of COCs into the environment.	1
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-27. Estimated Capital Cost: $823 million Estimated Annual Operation and Maintenance Cost: $0 Estimated 30 Year Present Worth Cost: $823 million	3
Cumulative Score for this Alternative		**15**

Table 9-10
Evaluation of Remedial Action Alternatives For Site S
Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative is not protective of human health or the environment. No action would be taken to minimize potential exposure to impacted soils at Site S. In addition, no action would be taken to minimize infiltration of surface water at the site. As identified in the human health and ecological risk assessments, risks are present above acceptable ranges for potential future construction/utility workers, outdoor industrial workers, and trespassers from direct contact with contaminated soil at the site. These risks and the remedial action objectives developed for the site (Section 9.1) would not be addressed by this alternative. This alternative would not however, disturb the contaminated material at the site and release COCs to the environment.	4
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would not meet the ARARs for disposal of hazardous waste and PCB containing wastes.	4
Short-Term Effectiveness (balancing criteria)	This alternative would not present short-term risks to remedial construction workers or to the community. This alternative would not include short-term risks associated with excavation of contaminated soil containing VOCs which could be significant. In the short-term, environmental impact from this alternative would be less than intrusive corrective actions but the remedial action objectives would not be achieved.	2
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint but is not likely to be acceptable to the regulatory agency and public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at protecting human health and the environment, or meeting the remedial action objectives for the site. The risks to human health and the environment would not be mitigated by this alternative.	4
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	No reduction of the toxicity, mobility, or volume would occur except that which occurs through natural attenuation. Due to the nature and extent of contamination at the site this would not likely result in a significant reduction in the toxicity, mobility, or volume of COCs.	4
Cost (balancing criteria)	There is no cost associated with this alternative.	1
Cumulative Score for this Alternative		**20**

Table 9-11
Evaluation of Remedial Action Alternatives For Site S
Alternative 2 – Install a RCRA Cap

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by capping the site with a RCRA cap to minimize human exposure to impacted soils and minimize the infiltration of surface water through the area. The site would be capped and fenced to limit access and to control any future excavation or trespassing on the site which would be protective of human health by minimizing risks identified in the risk assessment for the site. This capping or covering process would also be protective of the environment by minimizing infiltration of surface water, thereby, limiting generation of leachate from the site. Installing a cap would also effectively eliminate erosion of soil containing COCs from the site. By reducing exposure, significantly reducing surface water infiltration and erosion, this alternative would be protective of human health and the environment by directly addressing risks identified in the risk assessment for the site. These risks included future construction/utility workers, outdoor industrial workers, and trespassers. This alternative would also be protective of potential ecological receptors by eliminating potential exposure routes. This alternative would be protective of future construction/utility workers and outdoor industrial workers as well as trespassing teenagers.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with most of the identified ARARs but may not address all requirements for hazardous waste disposal.	3
Short-Term Effectiveness (balancing criteria)	This alternative involves minimal short-term risks to remediation workers, workers in the area or the general public. The cap or cover installation process involves routine construction and site health and safety risks can be easily managed. Disturbance and exposure to impacted soils will be minimal during construction of caps or covers over the site. Short-term risks to the public would be low since disturbance of impacted soil and the potential release of COCs into the environment is minimal.	1
Implementability (balancing criteria)	This alternative is implementable at the site. Installing a RCRA style caps is a well-established technology that utilize readily available equipment, materials, and labor. Capping is a conditional remedy for closed landfills under CERCLA and is often accepted by regulatory agencies and the public.	2

Table 9-11
Evaluation of Remedial Action Alternatives For Site S
Alternative 2 – Cap or Cover Fill Area Sites
(Continued)

		Ranking
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be effective in the long-term at meeting the remedial action objectives for the site but long-term inspection and maintenance would be required to maintain the cap. The cap maintenance would be critical to the long-term success of this alternative as well as institutional controls and deed restrictions. Many landfills across the country have been effectively closed utilizing a RCRA cap or engineered soil cover.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would not reduce the toxicity, or volume through treatment. The alternative would reduce the mobility of contaminants by controlling erosion of impacted soils, and limiting infiltration of surface water through the contents of the site. This would reduce the potential source to groundwater from the material present at the site.	3
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-25. Estimated Capital Cost: $1.4 million Estimated Annual Operation and Maintenance Cost: $102,000 Estimated 30 Year Present Worth Cost: $2.7 million	2
Cumulative Score for this Alternative		**15**

Table 9-12
Evaluation of Remedial Action Alternatives For Site S
Alternative 3 – Excavation and Off-Site Disposal

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment. The volume of soil that would require excavation, transportation and disposal is estimated at 15,000 cubic yards (loose). This material would be from areas where known hazardous waste is present. COCs could be released to the environment during excavation but excavation of 15,000 cubic yards and off-site disposal is a manageable sized project and human health and the environment would be protected by removing the material from Site S, treating a portion of it and disposing of all the material at an off-site RCRA Hazardous Waste landfill or incinerator.	2
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would meet the ARARs identified for the site for removal, treatment, and off-site disposal of hazardous waste.	2
Short-Term Effectiveness (balancing criteria)	The short-term impacts at the site to construction workers, local roads, local air pollution, and the overall community could be significant but manageable. Excavation of 15,000 cubic yards and transportation of contaminated soil could create potential health hazards to on-site workers and could cause some release of COCs to the environment, however, an excavation of that size is manageable and those short-term risks could be controlled.	4
Implementability(balancing criteria)	This alternative is implementable at this site. With an estimated volume of 15,000 cubic yards (loose) of contaminated soil and waste and an expected daily excavation production rate of 500 cubic yards per day, the excavation would take approximately 30 days to complete. Disposal and treatment capacity for this volume of soil is readily available.	3
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be effective at eliminating the human health and environmental risks identified at the site and would meet the remedial action objectives. This alternative, once implemented, would be a permanent solution.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative assumes 50 percent of the excavated soil would be treated utilizing either on-site the thermal desorption or off-site incineration. Removal of the remaining soil and waste material and placing in a secure off-site facility would reduce the mobility of COCs at Site S.	1
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-27. Capital Cost: $10.5 million Annual Operation and Maintenance Cost: $0 30 Year Present Worth Cost: $10.5 million	3
Cumulative Score for this Alternative		**16**

Table 9-13
Evaluation of Remedial Action Alternatives For Site S
Alternative 4 – Excavate, Treat to the Extent Necessary, Dispose in an On-Site RCRA Cell

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment. Excavation and on-site treatment would be completed in a manner to minimize the release of COCs from the excavated material to the environment. In addition, an on-site disposal cell would be designed and constructed to last for many years. Potential exposure to COCs and leachate production would be significantly reduced. By placing the material from this site in a secure, lined cell with a leachate collection system the alternative is protective of human health and the environment.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would meet ARARs including RCRA hazardous waste and TSCA PCB disposal site requirements.	1
Short-Term Effectiveness (balancing criteria)	This alternative would present some potentially significant short-term risk to remediation site workers and to others working in the area. The area contains a mixture of wastes and volatile compounds that could be released to the environment during excavation. However, the volume of material that would require excavation and disposal is manageable compared to the much larger sites that make up SA2. Excavation of approximately 15,000 yards could be completed in one season instead of many years at the other sites. This is a manageable sized project and the short-term risks associated with excavation at Site S could be controlled through institutional and engineering controls.	3
Implementability (balancing criteria)	This alternative is implementable at the site. Some of the soil would likely require on-site treatment prior to placing in the disposal cell. Some of the soil may not be amenable to on-site treatment and disposal and would require off-site incineration. With a reasonable volume of material at Sites S, this alternative would be implementable at the site. This alternative is also likely to be acceptable to regulatory agencies and the public.	4
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would require long-term monitoring, maintenance, and leachate collection and disposal. Properly maintained, this alternative would likely be an effective alternative over the long-term. Treatment of some of the material removed form the site is a permanent solution that would result in an overall reduction of COCs at the site.	2
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative assumes that 50 percent of the material excavated would be treated prior to disposal. This treatment would involve on-site thermal desporption for 25 percent of the excavated material and off-site incineration for 25 percent of the excavated material. By treating the material containing the highest concentration of COCs, a significant reduction in the toxicity, mobility, and volume would be achieved by this alternative by placing the soil in an on-site landfill with a leachate collection system, the mobility of COCs in	2

Table 9-13
Evaluation of Remedial Action Alternatives For Site S
Alternative 4 – Excavate, Treat to the Extent Necessary, Dispose in an On-Site RCRA Cell

		Ranking
	leachate to the groundwater would be significantly reduced.	
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-28. Estimated Capital Cost: $10.1 million Estimated Annual Operation and Maintenance Cost: $103,000 Estimated 30 Year Present Worth Cost: $11.4 million	4
Cumulative Score for this Alternative		**19**

Table 9-14
Evaluation of Remedial Action Alternatives For Site Q (Ponds)
Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would not effectively limit the potential human health risk due to consumption of fish which are caught out of these ponds. However, the risks were calculated using very conservative assumptions regarding consumption of fish from the ponds.	5
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with identified ARARs. No ARARs were identified which require action be taken for the Site Q Ponds.	5
Short-Term Effectiveness (balancing criteria)	There are no significant short-impacts associated with this alternative.	1
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint but is not likely to be acceptable to the regulatory agency or the public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at minimizing potential human health risks associated with the site. However, the potential health risks were calculated using very conservative assumptions that may not be realistic.	5
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	There would be no reduction in the toxicity, mobility, or volume of contaminants associated with this site.	5
Cost (balancing criteria)	There is no cost associated with this alternative.	1
Cumulative Score for this Alternative		**23**

Table 9-15
Evaluation of Remedial Action Alternatives For Site Q (Ponds)
Alternative 2 – Institutional Controls (Fencing, Warning Signs)

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health by significantly restricting access and subsequently fishing and fish consumption by limiting access to the ponds with a high fence and placing warning signs to discourage fishing. Fishing would likely be significantly limited by this alternative but would not likely be completely eliminated. Because the human health risks identified for the ponds were based on conservative assumptions regarding consumption of fish fillets, limiting access for fishing at the site would likely be protective of human health by reducing the actual incidence of fishing.	4
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would meet identified ARARs for the Site.	3
Short-Term Effectiveness (balancing criteria)	This alternative would have minimal short-term impacts at the site and would not pose any significant risks to construction workers or the public. Potential exposure to impacted soils during construction could be controlled through implementation of a health and safety plan.	2
Implementability (balancing criteria)	This alternative is implementable at the site but its location within the river floodplain would likely significantly increase long-term operation and maintenance. Flood events would likely damage the fence and repairs would be required to maintain security of the site.	2
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would likely be effective if the fence and warning signs were properly maintained over the long-term, but this alternative would not be a permanent solution.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	No reduction of the toxicity, mobility, or volume would occur with this alternative.	4
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-29: • Capital Cost: $130,000 • Annual Operation & Maintenance Cost: $5,000 • 30 year present Worth Cost: $190,000	3
Cumulative Score for this Alternative		**21**

Table 9-16
Evaluation of Remedial Action Alternatives for Site Q (Ponds)
Alternative 3 - Constructed Wetlands

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by eliminating the fish from the ponds and converting the ponds into wetlands. This would eliminate the human health risk identified for the site and would achieve the remedial action objectives. This alternative would benefit the environment by establishing a wetlands in this area.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would meet ARARs identified for the site.	1
Short-Term Effectiveness (balancing criteria)	This alternative would have minimal short-term risks during construction in an area of impacted soils. These could be managed through a project specific health and safety plan.	3
Implementability (balancing criteria)	This alternative is implementable at the site utilizing readily available equipment, materials, and labor. Constructed wetlands have been completed at numerous sites and the technology is well established.	5
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be a long-term, permanent remedy to address risks identified at the site. Some operation and maintenance activities would be required to maintain the integrity of the system over time.	2
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	The toxicity and mobility associated with COCs in fish in the ponds would be effectively eliminated by this alternative.	2
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-30. Capital Cost: $2.9 million Annual Operation and Maintenance Cost: $0 30 Year Present Worth Cost: $2.9 million	5
Cumulative Score for this Alternative		**19**

Table 9-17
Evaluation of Remedial Action Alternatives for Site Q (Ponds)
Alternative 4 – Pond Liner

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health and the environment by isolating soil at the bottom of the ponds from the water when the ponds contain water. This would isolate the COCs in soil currently in the ponds from fish that arrive in the ponds from the Mississippi River during periods of high water. By isolating the fish from the COCs, the risk of fish consumption due to the ponds would be significantly reduced.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	This alternative would comply with ARARs identified for the Site.	2
Short-Term Effectiveness (balancing criteria)	This alternative would present minimal short-term risks associated with construction activities in an area of impacted soils. This risk to construction workers could be easily managed through a Health and Safety Plan.	5
Implementability (balancing criteria)	This alternative is implementable at the site. Some grading, rock removal and other site preparation activities would be required. The construction activities would also be significantly affected if a flood event occurred during installation of the liner.	4
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be effective at isolating impacted soil from fish that get into the ponds during flooding. The liner would last for a long-time but would require periodic repair or replacement.	4
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would decrease the mobility of soil containing COCs by isolating them below a liner and clean soil covering the liner.	3
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-30. Estimated Capital Cost: $1 million Estimated Annual Operation and Maintenance Cost: $0 Estimated 30 Year Present Worth Cost: $1 million	4
Cumulative Score for this Alternative		**25**

Table 9-18
Evaluation of Corrective Measure Alternatives For Site Q (Ponds)
Alternative 5 – Pond Filling

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative would be protective of human health by filling in the ponds, thereby eliminating fishing and the only risk identified at the site. Although the ponds would be eliminated, they only hold water following flooding form the Mississippi River and do not sustain fish populations on their own. Filling these ponds in does not have any significant impact on the environment.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	No ARARs were identified which would preclude implementation of this alternative.	4
Short-Term Effectiveness (balancing criteria)	Filing in the ponds with clean fill would not pose any significant risks to site workers. Exposure to impacted soils at the Q Ponds site could be effectively controlled with implementation of a health and safety plan.	4
Implementability (balancing criteria)	This alternative is readily implementable at the site. The volume of fill required is large but it would be available in the area. The regulatory agencies and public would likely accept this alternating since the pounds are not self sustaining and only periodically hold fish from the Mississippi.	3
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would be an effective, permanent solution and would not require any long-term maintenance.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	This alternative would eliminate the mobility and toxicity of COCs in fish associated with the ponds.	1
Cost (balancing criteria)	The estimated cost for this alternative is \$0. The cost estimate for this alternative, if off-site fill is brought in, is presented in Table 9-30. Estimated Capital Cost: \$7.4 million Estimated Annual Operation and Maintenance Cost: \$0 Estimated 30 Year Present Worth Cost: \$7.4 million	2
Cumulative Score for this Alternative		**18**

Table 9-19
Evaluation of Corrective Measure Alternatives
Groundwater Alternative 1 – No Action

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	There are existing ordinances in the Villages of Sauget and Cahokia that prohibit the use of groundwater in the vicinity of the SA2 as a potable water source. These ordinances provide long term protection of human health. The HHRA did not identify any risk to human health associated with the groundwater at SA2. However, the ecological risk assessment identified an impact to the Mississippi River adjacent to and down stream of Site R. Implementation of a No Action alternative will not protect the Mississippi River from adverse ecological impact due to the discharge of impacted groundwater to surface water. In addition, the remedial action objectives developed for the site (Section 9.1) would not be addressed by this alternative.	5
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	Based on the discussion in Section 9.4, Illinois Class I standards and federal MCLs are appropriate ARAR for SA2 groundwater. 35 IAC 620.250 provides for the establishment of a groundwater management zone, wherein alternate water quality standards are allowed in accordance with 35 IAC 620.450. This alternative is compliant with ARARs.	5
Short-Term Effectiveness (balancing criteria)	This alternative would not include short-term risks associated with implementation of a more aggressive or intrusive corrective action for groundwater at the site. In the short-term, environmental impact from this alternative would be less than intrusive corrective actions but the corrective action objectives would not be achieved.	2
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint. However, it is unlikely that this alternative would be acceptable to the regulatory agencies and public.	1
Long-Term Effectiveness and Permanence (balancing criteria)	This alternative would not be effective in the long-term at protecting the environment, or meeting the corrective action objectives for the site. The ecological risks to the Mississippi River would not be mitigated by this alternative.	5
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	In the long term, natural processes in groundwater, sediments, and surface water will reduce the toxicity, mobility, and volume of contaminants discharging to the Mississippi River. Natural processes such as biodegradation, adsorption, dilution, volatilization, and chemical reactions with subsurface materials will reduce contaminant concentrations in the groundwater system. Similar processes occur in sediments and surface water. However, this alternative does not provide for treatment beyond that afforded by natural processes.	5
Cost (balancing criteria)	There is no cost associated with this alternative. • Capital Cost: \$0 • Annual Operation & Maintenance Cost: \$0 • 30 year present Worth Cost: \$0	1
Total Ranking for this Alternative		**24**

Table 9-20
Evaluation of Corrective Measure Alternatives
Groundwater Alternative 2 – Institutional Controls, Groundwater Monitoring

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	There are existing ordinances in the Villages of Sauget and Cahokia that prohibit the use of groundwater in the vicinity of the SA2 as a potable water source. These ordinances provide long term protection of human health. The HHRA did not identify any risk to human health associated with the groundwater at SA2. However, the ecological risk assessment identified an impact to the Mississippi River adjacent to and down stream of Site R. Implementation of this alternative will not protect the Mississippi River from adverse ecological impact due to the discharge of impacted groundwater to surface water. In addition, the corrective action objectives developed for the site (Section 9.1) would not be addressed by this alternative.	4
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	Based on the discussion in Section 9.4, Illinois Class I standards and federal MCLs are appropriate ARAR for Area 2 groundwater. 35 IAC 620.250 provides for the establishment of a groundwater management zone, wherein alternate water quality standards are allowed in accordance with 35 IAC 620.450. This alternative is compliant with ARARs.	4
Short-Term Effectiveness (balancing criteria)	This alternative involves minimal short term risks to remedial construction workers or to the community. Potential exposure to groundwater and contaminated soils while installing groundwater monitoring wells or conducting groundwater sampling will be controlled by the use of appropriate health and safety procedures. Investigation derived wastes and purge water produced during well development and sampling will be managed and disposed of as provided in an appropriate sampling and analysis plan. Potential exposure to contaminants during bioaccumulation sampling will be managed and controlled by the implementation of proper health and safety procedures.	3
Implementability (balancing criteria)	This alternative is readily implementable at the site from a technical standpoint. However, it is unlikely that this alternative would be acceptable to the regulatory agencies and public.	3
Long-Term Effectiveness and Permanence (balancing criteria)	The existing ordinances in the Villages of Sauget and Cahokia prohibiting the use of groundwater as a potable source provide long-term protection of human health. However, the ecological risk associated with discharge of groundwater to the Mississippi River adjacent to and down stream of Site R is not addressed by this alternative. Therefore, this alternative is not an adequate long term remedy for meeting the remedial action objectives.	4

Table 9-20
Evaluation of Corrective Measure Alternatives
Groundwater Alternative 2 – Institutional Controls, Groundwater Monitoring
(Continued)

		Ranking
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	In the long term, natural processes in groundwater, sediments, and surface water will reduce the toxicity, mobility, and volume of contaminants discharging to the Mississippi River to some degree. Natural processes such as biodegradation, adsorption, dilution, volatilization, and chemical reactions with subsurface materials will reduce contaminant concentrations in the groundwater system. Similar processes occur in sediments and surface water. However, this alternative does not provide for treatment beyond that afforded by natural processes.	4
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-32 • Capital Cost: $326,033 • Annual Operation & Maintenance Cost: $998,720 • 30 year present Worth Cost: $5.8 million	2
Total Ranking for this Alternative		**24**

Table 9-21
Evaluation of Remedial Action Alternatives
Groundwater Alternative 3 – Institutional Controls, Monitoring, Physical Barrier Adjacent to Site R

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	This alternative is protective of human health and the environment. There are existing ordinances in the Villages of Sauget and Cahokia that prohibit the use of groundwater in the vicinity of the SA2 as a potable water source. These ordinances provide long term protection of human health. The HHRA did not identify any risk to human health associated with the groundwater at SA2. However, the ecological risk assessment identified an impact to the Mississippi River adjacent to and down stream of Site R. Construction and operation of a physical barrier will prevent groundwater discharge and protect the Mississippi River from adverse ecological impacts.	3
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	Based on the discussion in Section 9.4, Illinois Class I standards and federal MCLs are appropriate ARAR for Area 2 groundwater. 35 IAC 620.250 provides for the establishment of a groundwater management zone, wherein alternate water quality standards are allowed in accordance with 35 IAC 620.450. This alternative is compliant with ARARs.	3
Short-Term Effectiveness (balancing criteria)	Implementation of this alternative will present minimal risk to human health and the environment. Potential exposure to contaminants by remedial construction workers during the installation of the slurry wall will be controlled by the use of appropriate health and safety procedures. Materials excavated during the process will be stockpiled at Site R and will be managed in conjunction with the corrective action for this Site. Potential exposure to contaminated groundwater and soils while installing groundwater extraction and monitoring wells or conducting groundwater sampling will be controlled by the use of appropriate health and safety procedures. Investigation derived wastes and purge water produce during well development and sampling will be managed and disposed of as provided in an appropriate sampling and analysis plan. Potential exposure to contaminants during bioaccumulation sampling will be managed and controlled by the implementation of proper health and safety procedures.	1
Implementability (balancing criteria)	Installation of a physical barrier and a three-well extraction system can be accomplished with conventional materials and equipment. The extraction wells can be expected to have relatively high maintenance, operation, and replacement requirements. The ABRTF has indicated that the facility has the capacity to treat the extracted groundwater at the proposed flow rate. This alternative would likely be acceptable to the regulatory agencies and the public.	2

Table 9-21
Evaluation of Remedial Action Alternatives
Groundwater Alternative 3 – Institutional Controls, Monitoring, Physical Barrier Adjacent to Site R
(Continued)

		Ranking
Long-Term Effectiveness and Permanence (balancing criteria)	The existing ordinances in the Villages of Sauget and Cahokia prohibiting the use of groundwater as a potable source provide long-term protection of human health. The ecological risk associated with discharge of groundwater to the Mississippi River adjacent to and down stream of Site R is permanently addressed by this alternative. The barrier wall is an effective long-term solution to management of the risk at the site.	1
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	With this alternative, groundwater will be extracted and treated at a rate of 535 gpm during average Mississippi River flow. Extraction and treatment of groundwater at this rate will result in the treatment of approximately 185 million gallons of groundwater on an annual basis. This volume is groundwater that would have discharged to the Mississippi River under natural conditions. Therefore, treatment of this water will result in an overall decrease in the toxicity, mobility, and volume of contaminants discharging to the Mississippi River. Greater than 99 percent of the total estimated contaminant mass at SA2 is associated with Site R (refer to Section 9.5.6.6). Therefore, the slurry wall and groundwater extraction system included in Alternative 3 (currently being installed as an interim remedy at the site) are expected to capture over 99 percent of the overall contaminant mass being discharged from Sauget Area 2. In addition, natural processes such as biodegradation, adsorption, dilution, volatilization, and chemical reactions with subsurface materials will reduce contaminant concentrations in the groundwater system. Similar processes occur in sediments and surface water.	2
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-33. • Capital Cost: $8.1 million • Annual Operation & Maintenance Cost: $2.4 million • 30 year present Worth Cost: $31.4 million	3
Total Ranking for this Alternative		**15**

Table 9-22
Evaluation of Remedial Action Alternatives
Groundwater Alternative 4 – Institutional Controls, Monitoring, Physical Barrier Along Entire Western Side of Area 2, Sites O, P, Q, R, and S

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	Groundwater containing contaminant concentrations above the Illinois Class I Groundwater Standard has been observed along the western side of SA2. However, due primarily to the ordinance restricting use of groundwater in this area as a potable source, the HHRA did not identify any risk to human health associated with the groundwater at SA2. The ecological risk assessment identified an impact to the Mississippi River adjacent to and down stream of Site R. Construction and operation of groundwater extraction wells along the western property boundary will prevent discharge of contaminated groundwater and protect the Mississippi River from adverse ecological impacts. The alternative does not necessarily add additional benefit or protection of human health since the HHRA has not identified a risk to human health under current conditions.	1
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	Based on the discussion in Section 9.4, Illinois Class I standards and federal MCLs are appropriate ARAR for Area 2 groundwater. 35 IAC 620.250 provides for the establishment of a groundwater management zone, wherein alternate water quality standards are allowed in accordance with 35 IAC 620.450. This alternative is compliant with ARARs.	2
Short-Term Effectiveness (balancing criteria)	Implementation of this alternative would require excavation and construction of a 13,500 foot long barrier wall to a depth of 120 feet bgs. Construction of a barrier wall of this length will require excavation and disposal of approximately 234,000 cubic yards of potentially contaminated materials from the trench. Although the installation of the barrier wall would be conducted using appropriate health and safety protocol, excavation of the contaminated soil and disposal at Site R could potentially create health hazards to on-site workers and could cause the release of significant amounts of COCs to the environment. Potential exposure to contaminated groundwater and soils while installing groundwater extraction and monitoring wells or conducting groundwater sampling will be controlled by the use of appropriate health and safety procedures. Investigation derived wastes and purge water produce during well development and sampling will be managed and disposed of as provided in an appropriate sampling and analysis plan. Potential exposure to contaminants during bioaccumulation sampling will be managed and controlled by the implementation of proper health and safety procedures.	4

Table 9-22
Evaluation of Remedial Action Alternatives
Groundwater Alternative 4 – Institutional Controls, Monitoring, Physical Barrier Along Entire Western Side of Area 2, Sites O, P, Q, R, and S
(Continued)

		Ranking
Implementability (balancing criteria)	This alternative is potentially implementable. The ABRTF has indicated that the facility has the capacity to treat the extracted groundwater at the estimated flow rate. Significant challenges would be associated with disposal of the 234,000 cubic yards of potentially contaminated soils from the barrier wall installation. Based on the current implementation of the interim remedy, it is assumed that the material would be stockpiled at Site R and managed in conjunction with the overall remedy for this site. Construction of a barrier of this length would result in placement of approximately 4.5 feet of material over the entire 1,045,960 ft^2 footprint of Site R.	4
Long-Term Effectiveness and Permanence (balancing criteria)	Construction of a barrier wall along the entire length of SA2 is an effective long-term solution that will prevent discharge of groundwater with contaminant concentrations in excess of Illinois Class I standards to the Mississippi River. The extraction wells will provide a marginal increase in the rate of removal of contaminant mass, but the extraction wells do not enhance the long-term effectiveness and permanence of the monitoring and institutional control alternative. The existing ordinances in the Villages of Cahokia and Sauget prohibiting the use of groundwater as a potable source provide appropriate long term protection of human health. Improving public awareness of the risks associated with consumption of groundwater in this area will enhance the protection of human health.	2
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	With this alternative, groundwater will be extracted and treated at a rate of 3,000 gpm. This flow rate is approximately equal to the natural groundwater discharge rate to the Mississippi River. Extraction and treatment of groundwater at this aggressive rate will result in the treatment of approximately 1.7 billion gallons of groundwater on an annual basis. Treatment of this water will result in an overall decrease in the toxicity, mobility, and volume of contaminants discharging to the Mississippi River.	3
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-34. • Capital Cost: $31.2 million • Annual Operation & Maintenance Cost: $9.0 million • 30 year present Worth Cost: $136.3 million	4
Total Ranking for this Alternative		**20**

Table 9-23
Evaluation of Remedial Action Alternatives
Groundwater Alternative 5 – Institutional Controls, Monitoring, Hydraulic Containment Along Entire Western Side of Sauget Area 2, Sites O, P, Q, R, and S

		Ranking
Overall Protection of Public Health and the Environment (primary criteria)	Groundwater containing contaminant concentrations above the Illinois Class I Groundwater Standard has been observed along the western side of SA2. However, due primarily to the ordinance restricting use of groundwater in this area as a potable source, the HHRA did not identify any risk to human health associated with the groundwater at SA2. The ecological risk assessment identified an impact to the Mississippi River adjacent to and down stream of Site R. Construction and operation of groundwater extraction wells along the western property boundary will prevent discharge of contaminated groundwater and protect the Mississippi River from adverse ecological impacts. The alternative does not necessarily add additional benefit or protection of human health since the HHRA has not identified a risk to human health under current conditions.	2
Compliance with ARARs and Other Criteria, Advisories, and Guidance (primary criteria)	Based on the discussion in Section 9.4, Illinois Class I standards and federal MCLs are appropriate ARAR for Area 2 groundwater. 35 IAC 620.250 provides for the establishment of a groundwater management zone, wherein alternate water quality standards are allowed in accordance with 35 IAC 620.450. This alternative is compliant with ARARs.	1
Short-Term Effectiveness (balancing criteria)	Implementation of this alternative requires treatment of approximately 26,400 gpm (38 million gallons per day) of contaminated groundwater on a continual basis. It is likely that intensive O&M operations would be required by on-site remediation workers and by treatment plant operators. Extraction and treatment of this volume of groundwater could cause short term risks to the environment or remediation workers. Potential exposure to contaminated groundwater and soils while installing groundwater extraction and monitoring wells or conducting groundwater sampling will be controlled by the use of appropriate health and safety procedures. Investigation derived wastes and purge water produce during well development and sampling will be managed and disposed of as provided in an appropriate sampling and analysis plan. Potential exposure to contaminants during bioaccumulation sampling will be managed and controlled by the implementation of proper health and safety procedures.	5
Implementability (balancing criteria)	This alternative is implementable. However, the groundwater extraction rate exceeds the current capacity of the ABRTF. Therefore, it would be necessary to construct and operate an additional treatment facility with approximately the same capacity as the current ABRTF. Extraction and treatment of the volume of groundwater on a continual basis will involve significant technical challenges.	5

Table 9-23
Evaluation of Remedial Action Alternatives
Groundwater Alternative 5– Institutional Controls, Monitoring, Hydraulic Containment Along Entire Western Side of Sauget Sites O, P, Q, R, and S
(Continued)

		Ranking
Long-Term Effectiveness and Permanence (balancing criteria)	Extraction wells used for the hydraulic containment at the downgradient edge of SA2 will prevent discharge of groundwater with contaminant concentrations in excess of Illinois Class I groundwater standards to the Mississippi River. Treating groundwater will result in a permanent decrease in the overall contaminant mass at the site. In addition, because the wells will be pumped at the maximum sustainable flow rate, the groundwater flux through the source areas will be increased and the corresponding restoration time frame will be reduced. However, the analysis discussed in Section 9.5.4.1 indicates that the cleanup time fame will still be on the order of 140 years. The existing ordinances in the Villages of Cahokia and Sauget prohibiting the use of groundwater as a potable source provide appropriate long term protection of human health. Improving public awareness of the risks associated with consumption of groundwater in this area will enhance the protection of human health.	3
Reduction of Toxicity Mobility or Volume Through Treatment (balancing criteria)	With this alternative, groundwater will be extracted and treated at a rate of 26,400 gpm. This flow rate is approximately 8.7 times the natural groundwater discharge rate to the Mississippi River. Extraction and treatment of groundwater at this aggressive rate will result in the treatment of approximately 13.9 billion gallons of groundwater on an annual basis and an overall decrease in the cleanup time. The aggressive extraction would increase the groundwater flow rate through the contaminated source areas in Area 2 and would therefore result in a shorter cleanup time. The time to cleanup analysis contained in Appendix O indicates that this alternative would reduce the overall cleanup time by approximately 60% over natural degradation. Treatment of this water will result in an overall decrease in the toxicity, mobility, and volume of contaminants discharging to the Mississippi River.	1
Cost (balancing criteria)	The cost estimate for this alternative is presented in Table 9-35. • Capital Cost: $3.1 million • Annual Operation & Maintenance Cost: $71.0 million • 30 year present Worth Cost: $877 million	5
Total Ranking for this Alternative		**22**

Table 9-24
Evaluation of Remedial Action Alternatives for Sites O, Q North, R, and S
Alternative 2 – Cap or Cover Site

RCRA CAP (Vegetated) Cost Component	Unit	Unit Cost	Site O Quantity	Site O Extended Cost	Site R Quantity	Site R Extended Cost	Site S Quantity	Site S Extended Cost
Direct Capital Costs								
Clearing	Acre	$63.00	23	$1,458	25	$1,561	1	$64
Unclassified Fill for Base Contours	CY	$7.27	271,180	$1,971,479	133,866	$973,206	2,214	$16,096
Geonet for Gas Collection - geotextile 2 sides	SF	$0.43	1,007,811	$433,359	1,079,154	$464,036	44,307	$19,052
Sand Bedding Layer	CY	$11.20	18,663	$209,027	19,984	$223,825	821	$9,190
Geocomposite (40mil HDPE)	SF	$1.30	1,007,811	$1,310,154	1,079,154	$1,402,900	44,307	$57,599
Geonet for Drainage - geotextile one side	SF	$0.38	1,007,811	$382,968	1,079,154	$410,079	44,307	$16,837
Unclassified Fill for Cover (18 in)	CY	$7.27	57,130	$415,335	60,885	$442,634	2,672	$19,425
Topsoil (6 in)	CY	$24.47	19,552	$478,437	20,720	$507,018	986	$24,127
Seeding, Vegetative Cover	Acre	$3,528	23	$81,624	25	$87,403	1	$3,589
Automated Sprinkler	Acre	$4,407	23	$101,961	25	$109,179	1	$4,483
Grass Ditching, 3 ft Deep, 2:1 Slopes	LF	$12.18	6,200	$75,516	5,100	$62,118	900	$10,962
Gas Venting System	LF	$20.55	717	$14,739	768	$15,782	32	$648
			Direct Capital Cost Subtotals	$5,476,058		$4,699,740		$182,071
Indirect Capital Costs								
Engineering (15% of capital costs)				$821,409		$704,961		$27,311
Construction Management (10%)				$547,606		$469,974		$18,207
Contractor Mob/Demobilization (5%)				$273,803		$234,987		$9,103
Contractor Profit (7%)				$383,324		$328,981		$12,744
			Indirect Capital Cost Subtotals	$2,026,141		$1,738,904		$67,366
			TOTAL CAPITAL COSTS	**$7,502,199**		**$6,438,644**		**$249,437**
Annual O&M Costs								
Fertilize, 800 lb/ac (2/yr)	Acre	$86.90	46	$4,021	50	$4,305	2	$176.78
Mowing (16/yr)	Acre	$28.59	370	$10,583	396	$11,332	16	$465.28
Quarterly Inspection	EA	$2,000	4	$8,000	4	$8,000	4	$8,000
Miscellaneous Repair	EA	$250	1	$250	1	$250	1	$250
			Annual O&M Total	**$22,854**		**$23,888**		**$8,892**
			Present Value (30 yrs @ 7%)	**$283,602**		**$296,431.13**		**$110,342**
			TOTAL CONSTRUCTION & O&M (PV)	**$7,785,801**		**$6,735,075**		**$359,779**

Costs based from RSMeans Environmental Remediation Cost Data (2003)
Costs are installed costs and include equipment, labor, and materials

Assumptions: All work done in level D.
All fill imported from off-site

Table 9-25
Evaluation of Remedial Action Alternatives for Site Q North
Alternative 2 – Cap or Cover Site

RCRA CAP (Asphalt Covered) Cost Component	Unit	Unit Cost	Site Q North Quantity	Site Q North Extended Cost
Direct Capital Costs				
Clearing	Acre	$63.00	17	$1,071
Unclassified Fill for Base Contours	CY	$7.27	110,181	$801,016
Geonet for Gas Collection - geotextile 2 sides	SF	$0.43	1,591,083	$684,166
Sand Bedding Layer	CY	$11.20	29,465	$330,002
Geocomposite (40mil HDPE)	SF	$1.30	1,591,083	$2,068,408
Geonet for Drainage - geotextile one side	SF	$0.38	1,591,083	$604,612
Unclassified Fill for Cover (9 in)	CY	$7.27	89,002	$647,045
Stabilized Subbase IDOT Stone (6 in)	CY	$28.32	30,232	$856,170
Asphalt Intermediate Course (3 in)	TN	$56.59	28,798	$1,629,651
Prime Coat	SY	$0.35	176,787	$61,875
Tack Coat	SY	$0.27	176,787	$47,732
Asphalt Wearing Course (1 in)	TN	$57.64	9,599	$553,296
Grass Ditching, 3 ft Deep, 2:1 Slopes	LF	$12.18	4,800	$58,464
Gas Venting System	LF	$20.55	527	$10,830
			Direct Capital Costs Subtotal	**$8,354,338**
Indirect Capital Costs				
Engineering (15% of capital costs)				$1,253,151
Construction Management (10%)				$835,434
Contractor Mob/Demobilization (5%)				$417,717
Contractor Profit (7%)				$584,804
			Indirect Capital Costs Subtotal	**$3,091,105**
			TOTAL CAPITAL COSTS	**$11,445,443**
O&M Costs				
Resurface @ 10 yr & 20 yr (Tack Coat & Wearing Surface)				$1,202,057
			O&M Present Value (@ 7%)	**$603,975**
			TOTAL CONSTRUCTION & O&M (PV)	**$12,049,418**

Costs based from RSMeans Environmental Remediation Cost Data (2003)
Costs are installed costs and include equipment, labor, and materials

Assumptions: All work done in level D.
All fill imported from off-site

Table 9-26
Evaluation of Remedial Action Alternatives for Sites O, Q North, R, and S
Alternative 3 – Excavate, Treat, and Dispose Off-Site

Cost Component	Unit	Unit Cost	Site O Quantity	Site O Extended Cost	Site Q North Quantity	Site Q North Extended Cost	Site R Quantity	Site R Extended Cost	Site S Quantity	Site S Extended Cost	Combined Capital Cost
Direct Capital Costs											
Crawler-mounted excavator—3.125 cu.yd.	hr	$298	13,032	$3,883,536	23,262	$6,932,152	19,078	$5,685,330	243	$72,311	$16,573,330
Loader-3.0 cu.yd.	hr	$146	13,032	$1,902,672	23,262	$3,396,289	19,078	$2,785,430	243	$35,428	$8,119,819
Stabilize Wet Wastes	CY	$100	81,448	$8,144,800	145,389	$14,538,900	119,239	$11,923,900	1,517	$151,700	$34,759,300
Transportation & Disposal at Lone Mountain	ton	$95	1,038,467	$98,654,365	1,853,711	$176,102,545	1,520,300	$144,428,500	19,337	$1,837,015	$421,022,425
On-site Thermal Desorption Treatment	ton	$150	305,432	$45,814,800	545,209	$81,781,350	447,147	$67,072,050	5,687	$853,050	$195,521,250
Off-site Incineration	ton	$1,200	305,432	$366,518,400	545,209	$654,250,800	447,147	$536,576,400	5,687	$6,824,400	$1,564,170,000
Unclassified Fill	CY.	$10	814,483	$8,144,830	1,453,891	$14,538,910	1,192,393	$11,923,930	15,166	$151,660	$34,759,330
Direct Capital Cost Subtotals				$533,063,403		$951,540,947		$780,395,540		$9,925,564	$2,274,925,454
Indirect Capital Costs											
Personnel Mobilization	0.50% of construction cost			$2,665,317		$4,757,705		$3,901,978		$49,628	$11,374,627
Equipment Mobilization	1% of construction cost			$5,330,634		$9,515,409		$7,803,955		$99,256	$22,749,255
Performance Bond	3 % of capital cost			$15,991,902		$28,546,228		$23,411,866		$297,767	$68,247,764
Demobilize	1% of capital cost			$5,330,634		$9,515,409		$7,803,955		$99,256	$22,749,255
Indirect Capital Cost Subtotals				$29,318,487		$52,334,752		$42,921,755		$545,906	$125,120,900
TOTAL CAPITAL COSTS				**$562,381,890**		**$1,003,875,699**		**$823,317,295**		**$10,471,470**	**$2,400,046,354**

Cost Estimating Assumptions
Excavation Production Rate: 500 cu.yd. per day
Soil Density: 1.35 tons/cubic yard
Excavation Machine Hours: Production Rate 62.5 cu.yd./hr.

Table 9-27
Evaluation of Remedial Action Alternatives for Site S
Alternative 4 – Excavate and Dispose On-Site

NEW CELL & RCRA CAP (Vegetated) Cost Component	Unit	Unit Cost	Site S Quantity	Site S Extended Cost
Direct Capital Costs				
Clearing	Acre	$63.00	1	$64
Cell Design & Construction	CY	$56.21	11,019	$619,378
Stabilize Wet Wastes (25%)	CY	$110.00	2,755	$303,023
Manipulation/Placement of Waste to remain onsite (D7 Dozer) (75%)	HR	$266.32	177	$47,029
Excavation of Waste for Off-Site Disposal (25%) - 3.125 yd^3 excavator and 3 yd^3 loader	HR	$536.23	44	$23,673
Unclassified Fill for Base Contours	CY	$7.27	4,969	$36,123
Geonet for Gas Collection - geotextile 2 sides	SF	$0.43	44,307	$19,052
Sand Bedding Layer	CY	$11.20	821	$9,190
Geocomposite (40mil HDPE)	SF	$1.30	44,307	$57,599
Geonet for Drainage - geotextile one side	SF	$0.38	44,307	$16,837
Unclassified Fill for Cover (18 in)	CY	$7.27	2,672	$19,425
Topsoil (6 in)	CY	$24.47	986	$24,127
Off-site Incineration	TN	$1,200	5,130	$6,156,000
Seeding, Vegetative Cover	Acre	$3,528	1	$3,589
Automated Sprinkler	Acre	$4,407	1	$4,483
Leachate Control System	Each	$8,000	4	$32,000
Grass Ditching, 3 ft Deep, 2:1 Slopes	LF	$12.18	900	$10,962
Gas Venting System	LF	$20.55	32	$648
			Direct Costs Subtotal	**$7,383,200**
Indirect Capital Costs				
Engineering (15% of capital costs)				$1,107,480
Construction Management (10%)				$738,320
Contractor Mob/Demobilization (5%)				$369,160
Contractor Profit (7%)				$516,824
			Indirect Costs Subtotal	**$2,731,784**
			TOTAL CAPITAL COSTS	**$10,114,984**

Table 9-27
Evaluation of Remedial Action Alternatives for Site S
Alternative 4 – Excavate and Dispose On-Site
(Continued)

Annual O&M Costs				
Fertilize, 800 lb/ac (2/yr)	Acre	$86.90	2	$177
Mowing (16/yr)	Acre	$28.59	16	$465
Leachate Recovery/Treat/Disposal	Well	$23,456.68	4	$93,827
Quarterly Inspection	EA	$2,000	4	$8,000
Miscellaneous Repair	EA	$250	1	$250
			O&M Annual Total	**$102,719**
			Present Value (30 yrs @ 7%)	**$1,274,642**
			TOTAL CONSTRUCTION & O&M (PV)	**$11,389,626**

Costs based from RSMeans Environmental Remediation Cost Data (2003)

Costs are installed costs and include equipment, labor, and materials

Assumptions:
All work done in level D.

All fill imported from off-site

Table 9-28
Evaluation of Remedial Action Alternatives for Q Ponds
Alternative 2 -- Institutional Controls

Cost Component	Unit	Unit Cost	Quantity	Total Cost
Direct Capital Costs				
Fence Purchase and Installation	L.F.	$30	4,000	$120,000
Purchase and Install Signs	Ea.	$5.00	40	$200
			Direct Capital Cost Subtotals	$120,200
Indirect Capital Costs				
Personnel Mobilization	0.50% of construction cost			$601
Equipment Mobilization	1% of construction cost			$1,202
Performance Bond	3% of capital cost			$3,606
Demobilize	1% of capital cost			$1,202
			Indirect Capital Cost Subtotals	$6,611
			TOTAL CAPITAL COSTS	**$126,811**
Annual Operation and Maintenance Cost				
Fence Maintenance and Repair	Annual	$5,0000		$5,000
Sign Replacement				
			Annual O&M Total	**$5,000**
			Present Value (30 yrs @ 7%)	**$62,045**
			TOTAL CONSTRUCTION & O&M (PV)	**$188,856**

Table 9-29
Evaluation of Remedial Action Alternatives for Q Ponds
Alternatives 3, 4, and 5

Alternative 3--Constructed Wetland

Cost Component		Unit	Unit Cost	Quantity	Total Cost
Direct Capital Costs					
	Earthwork within wetland	CY	$4	169,000	$676,000
	Liner	SY	$4	156,400	$563,040
	Topsoil (imported)	CY	$14	26,000	$364,000
	Soil above Liner (imported)	CY	$14	77,000	$1,078,000
	Turf Reinforcement Mat	SY	$2.50	3,500	$8,750
	Water Control Structure	Ea.	$7,500	1	$7,500
				Direct Capital Cost Subtotals	$2,697,290
Indirect Capital Costs					
	Personnel Mobilization	0.50% of construction cost			$13,486
	Equipment Mobilization	1% of construction cost			$26,973
	Performance Bond	3% of capital cost			$80,919
	Demobilize	1% of capital cost			$26,973
				Indirect Capital Cost Subtotals	$148,351
				TOTAL CAPITAL COSTS	**$2,845,641**

Alternative 4--Pond Lining

Cost Component		Unit	Unit Cost	Quantity	Total Cost
Direct Capital Costs					
	Earthwork within wetland	CY	$4	160	$640
	Bedding (imported)	CY	$14	9,300	$130,200
	Liner	SY	$4	56,500	$203,400
	Soil above Liner (imported)	CY	$14	40,000	$560,000
				Direct Capital Cost Subtotals	$894,240
Indirect Capital Costs					
	Personnel Mobilization	0.50% of construction cost			$4,471
	Equipment Mobilization	1% of construction cost			$8,942
	Performance Bond	3% of capital cost			$26,827
	Demobilize	1% of capital cost			$8,942
				Indirect Capital Cost Subtotals	$49,183
				TOTAL CAPITAL COSTS	**$943,423**

Table 9-29
Evaluation of Remedial Action Alternatives for Q Ponds
Alternatives 3, 4, and 5
(Continued)

Alternative 5--Pond Filling

Cost Component		Unit	Unit Cost	Quantity	Total Cost
Direct Capital Costs					
	Earthwork within wetland	CY	$4	23,452	$93,808
	Imported Fill	CY	$14	490,224	$6,863,136
				Direct Capital Cost Subtotals	$6,956,944
Indirect Capital Costs					
	Personnel Mobilization	0.50% of construction cost			$34,785
	Equipment Mobilization	1% of construction cost			$69,569
	Performance Bond	3% of capital cost			$208,708
	Demobilize	1% of capital cost			$69,569
				Indirect Capital Cost Subtotals	$382,632
				TOTAL CAPITAL COSTS	**$7,339,576**

Figures

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SCALE FEET

Revision No.	Description	Date	By	App.

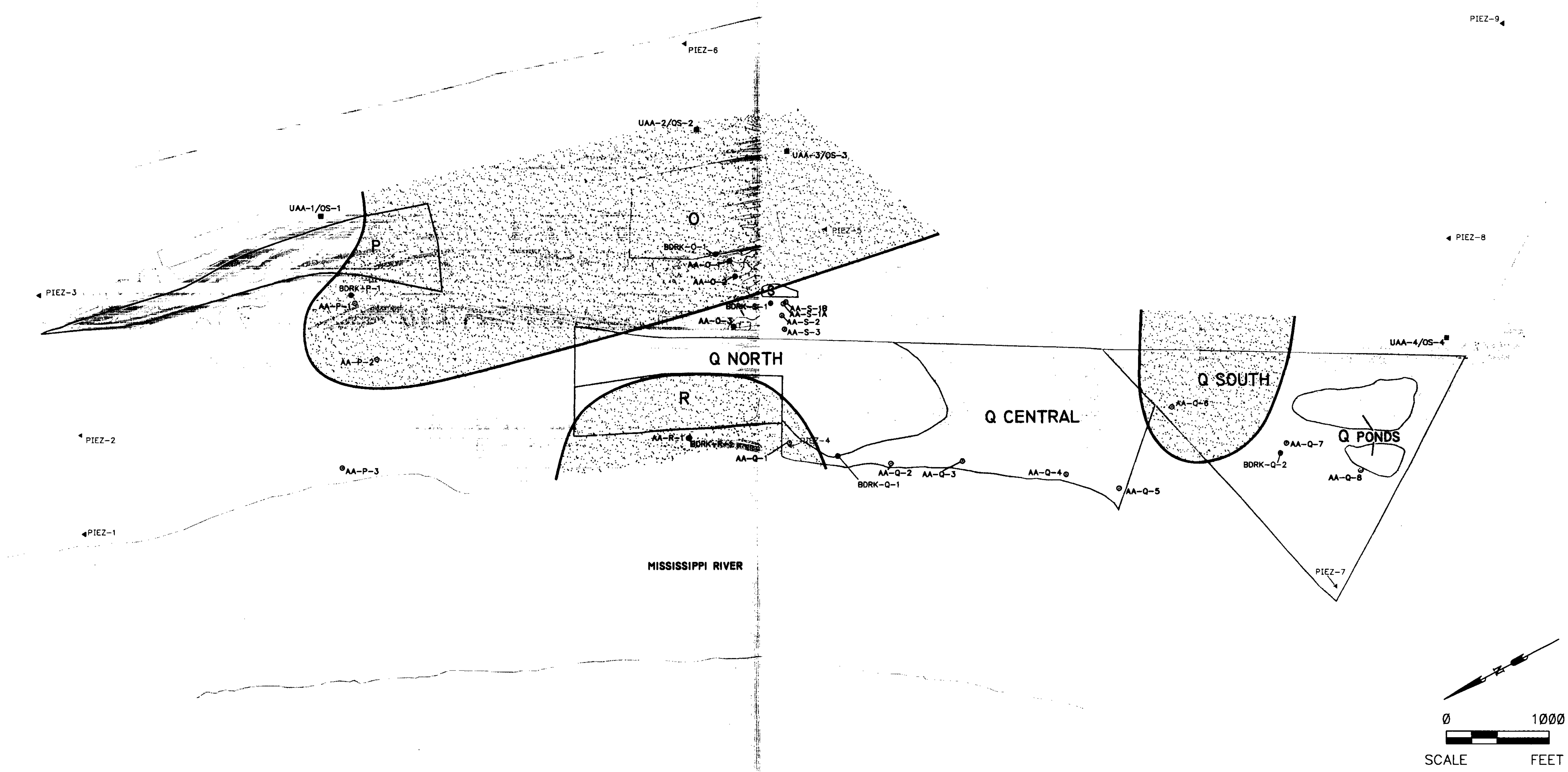
REVISIONS

SAUGET AREA 2
RI/FS
SAUGET ILLINOIS

Sample Location Map

Date: 5/17/03	Project Number: 21560888.07001	Figure Number: ES-1
Drawn by: djd	Design by: sjs	Checked by:

URS



LEGEND

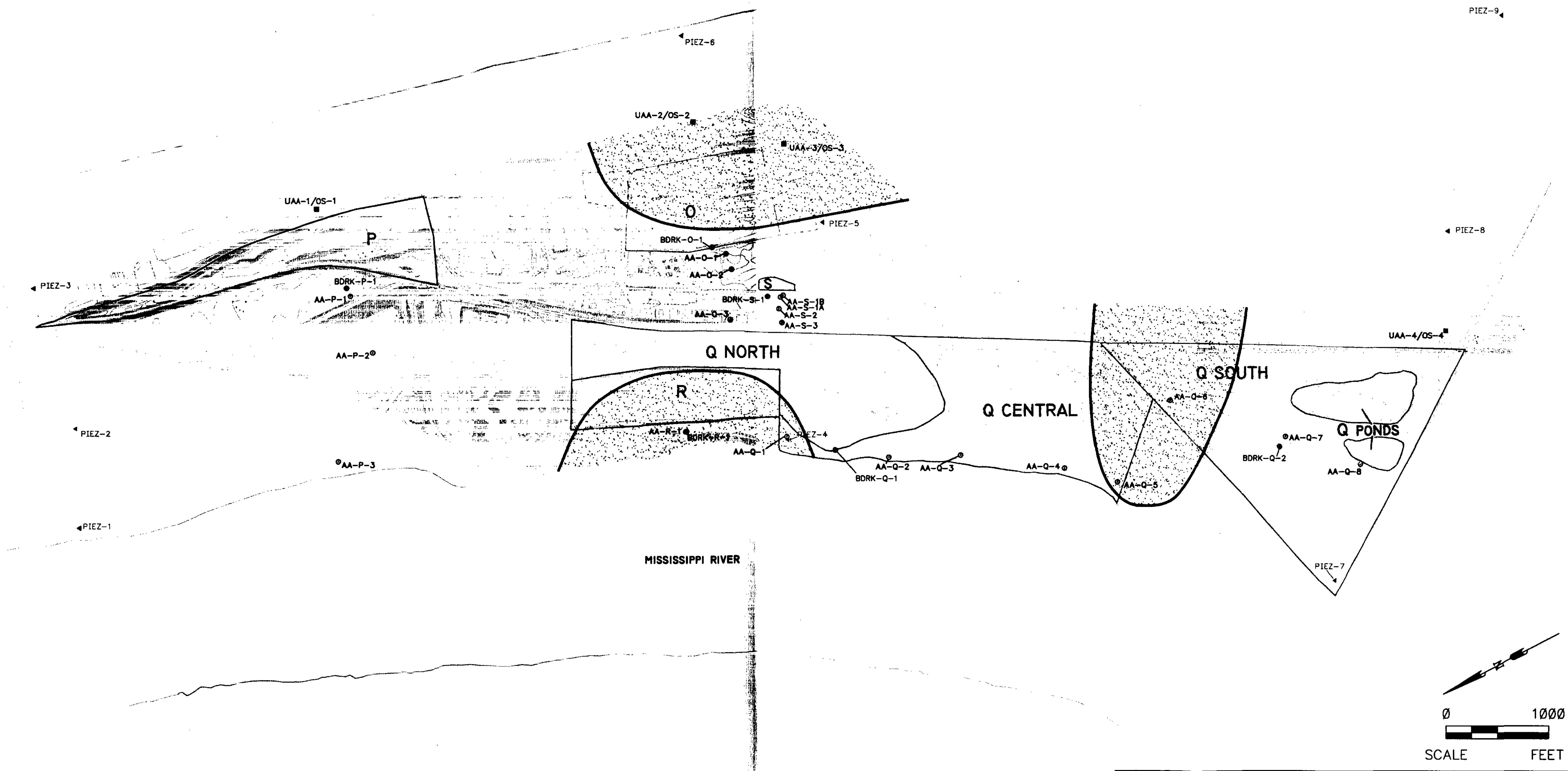
- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location

NOTES:

The edges of the plumes are the 1,000 ppb contour lines

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Groundwater Plume Map (VOC) — FIG. NO. ES-2

File: E:\21560888.04001\REPORTS\RI_FS REPORT\ES-2.DWG Last edited: 12/15/03 @ 6:15 p.m. WC-ST.LOUIS, MO



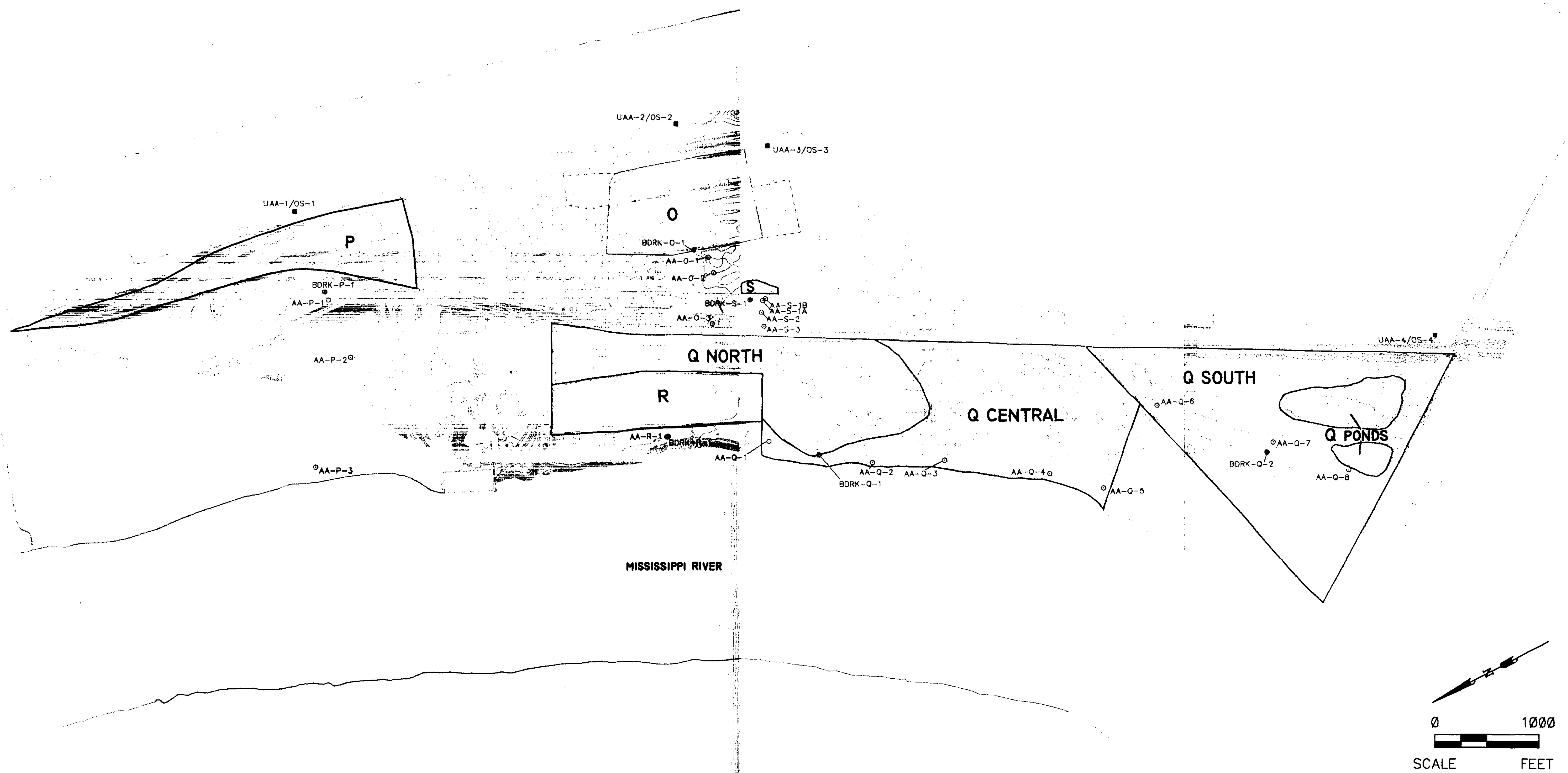
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location

NOTES:
The edge of the plumes are the 1,000 ppb contour lines

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Groundwater Plume Map (SVOC)
	FIG. NO. ES-3

File: E:\21560888.04001\REPORTS\RI_FS REPORT\ES-3.DWG Last edited: 12/15/03 @ 6:15 p.m. WC-ST.LOUIS, MO



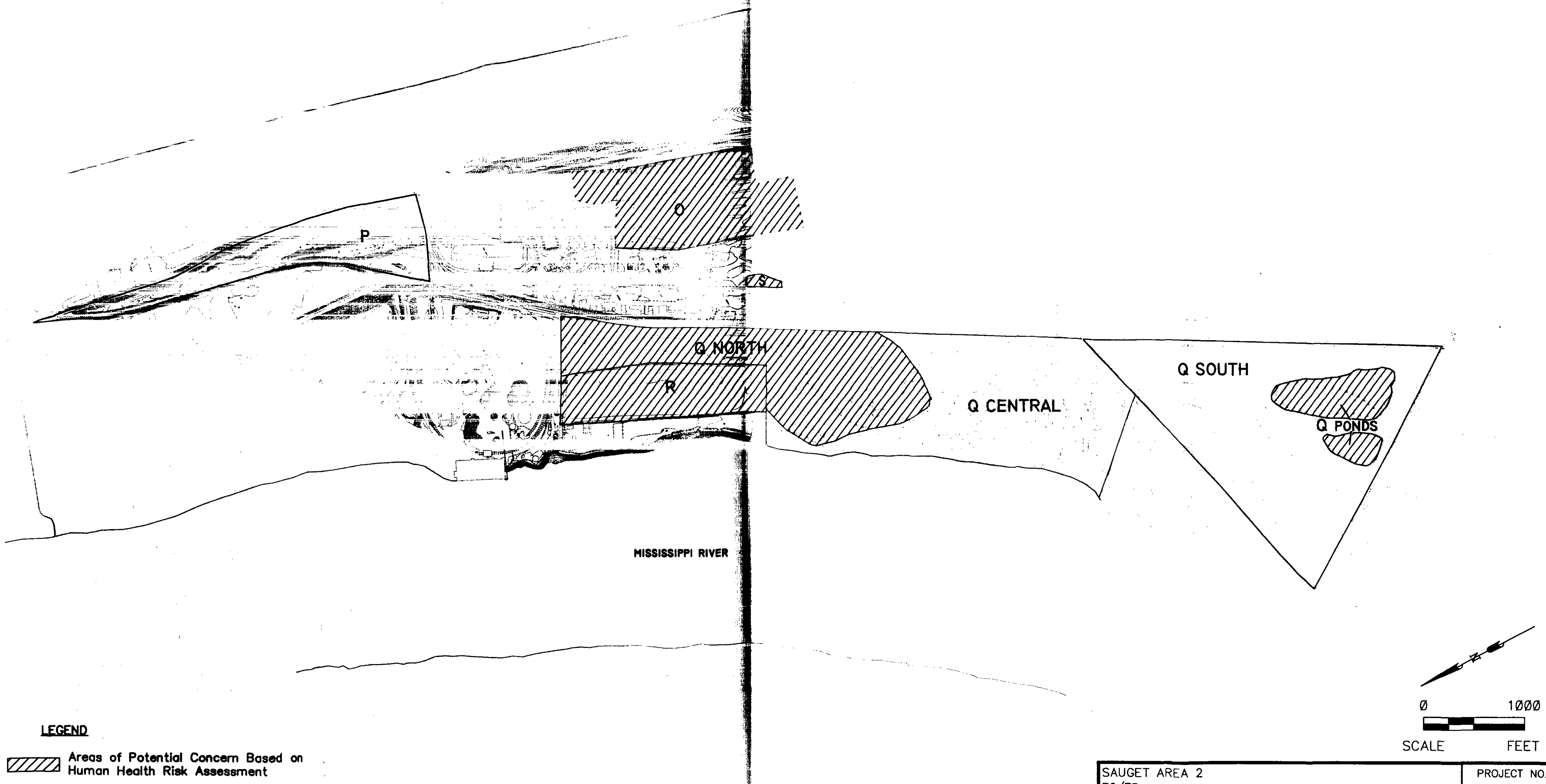
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well

NOTES:

All locations have at least one exceedance of an IEPA Class I Groundwater Standard

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Locations with Exceedances of IEPA Class I Groundwater Standards — FIG. NO. ES-4



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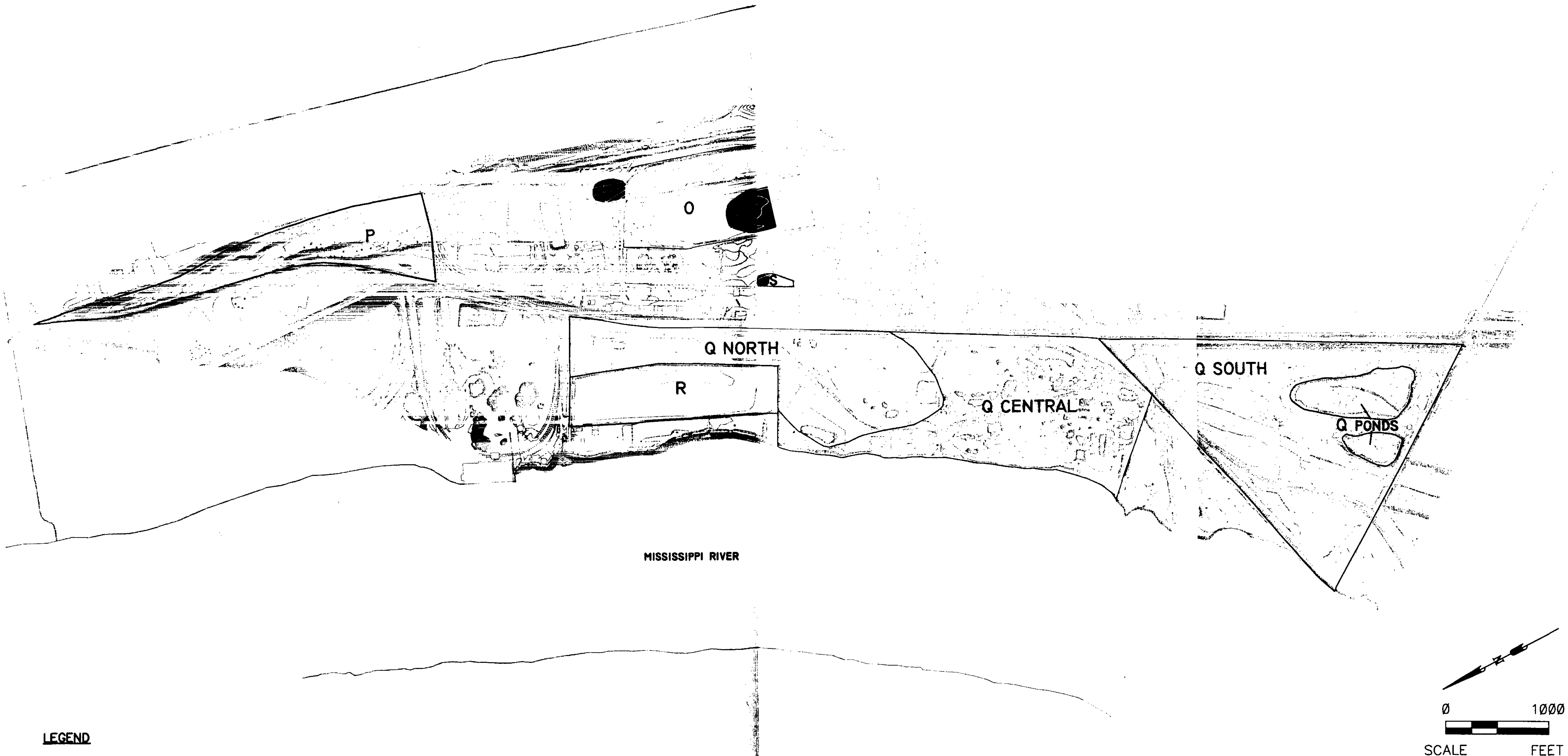
SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Areas of Potential Risk Based on the Human Health Risk Assessment	FIG. NO. ES-5



LEGEND

Areas of Potential Ecological Concern

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Areas of Potential Risk Based on the Baseline Ecological Risk Assessment	FIG. NO. ES-6

SOURCE: TAKEN FROM AMEC (BASELINE ECOLOGICAL RISK ASSESSMENT REPORT 2003).

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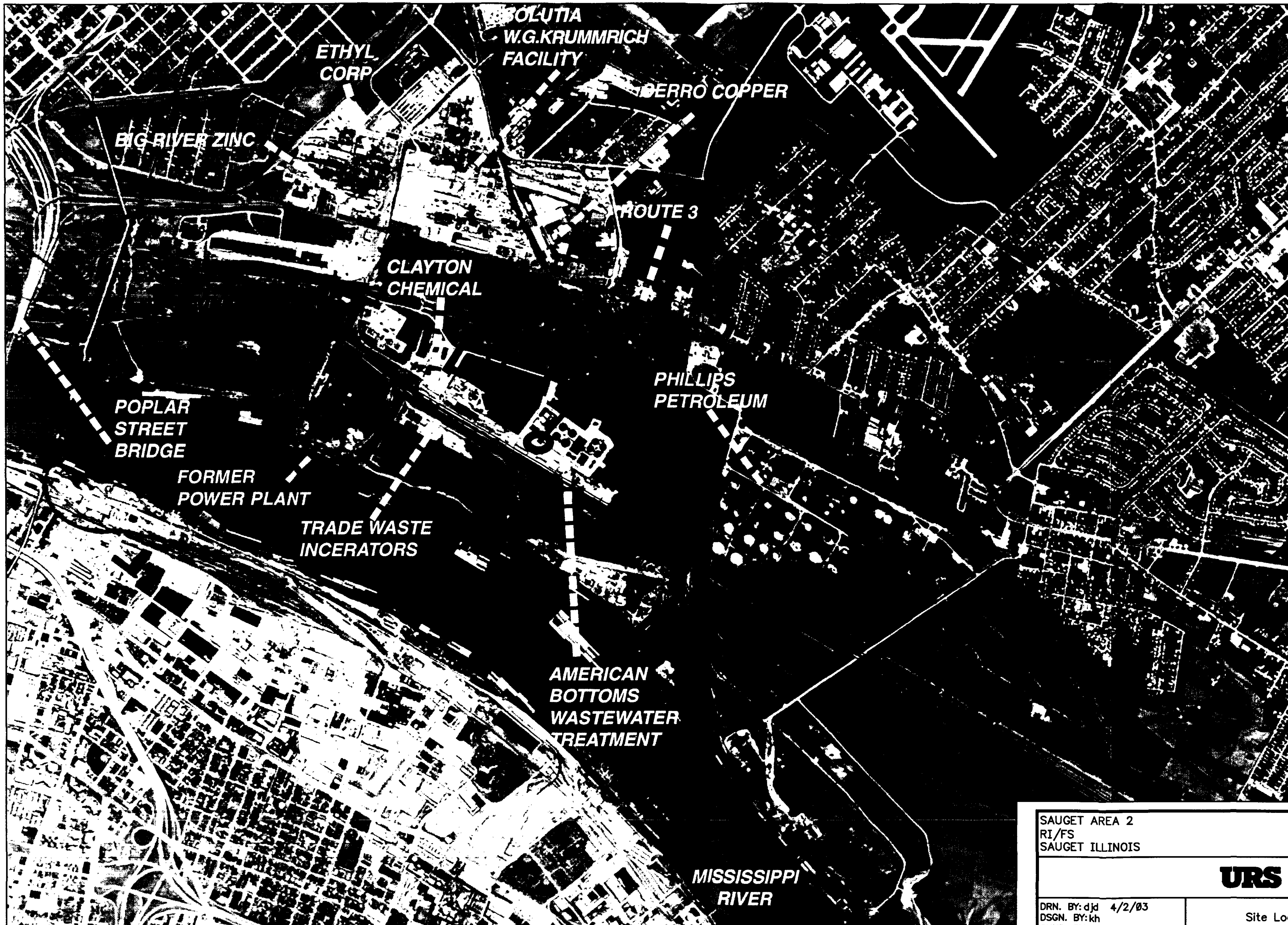

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Location Map	FIG. NO. 3-1

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-1 SITE MAP.DWG Last edited: 12/15/03 @ 6:17 p.m. WC-ST.LOUIS, MO

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SCALE FEET

Revision No.	Description	Date	By	App.

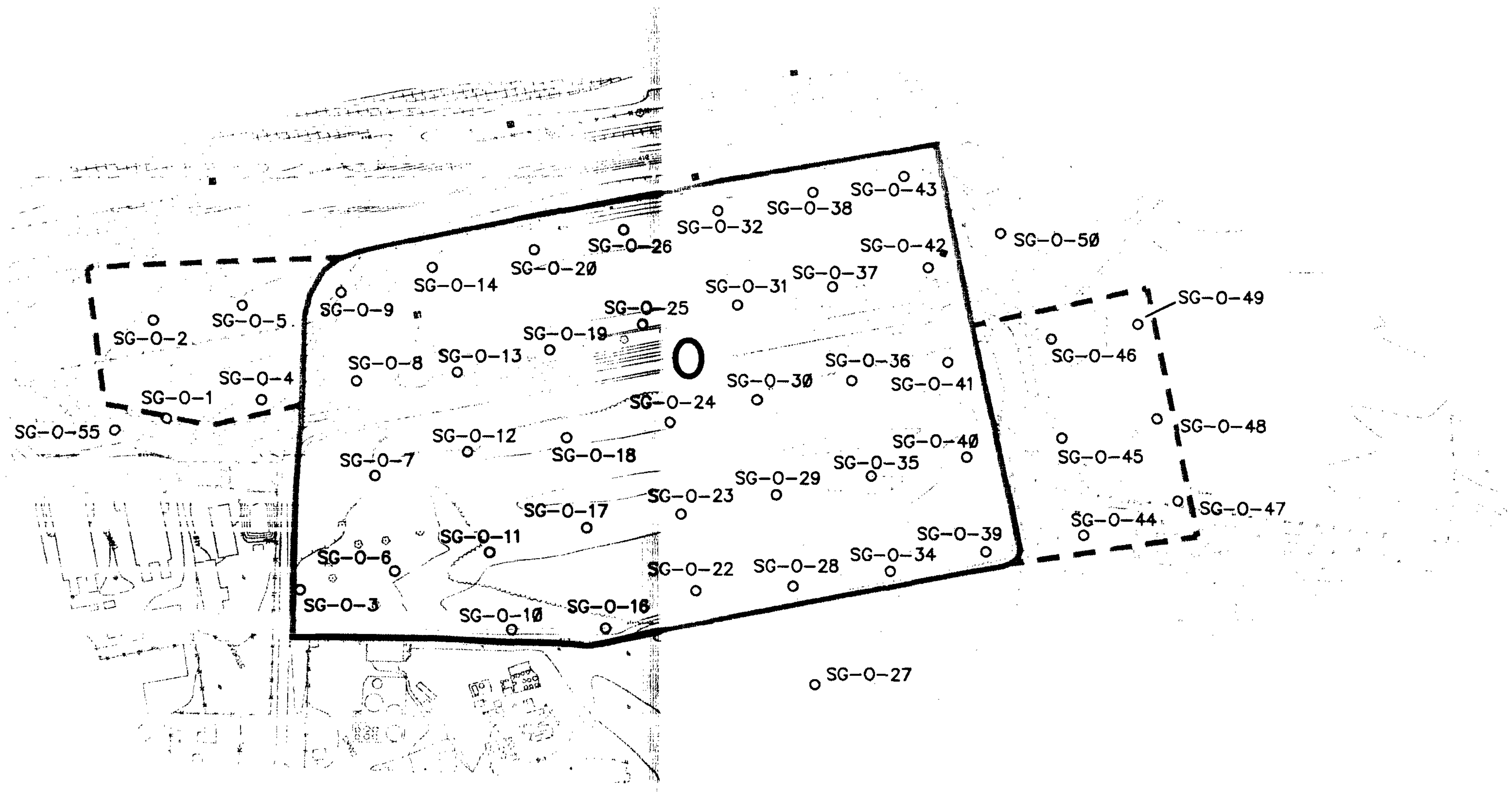
REVISIONS

SAUGET AREA 2
RI/FS
SAUGET ILLINOIS

Sample Location Map

Date: 5/17/03	Project Number: 21560888.07001	Figure Number: 3-2
Drawn by: djd	Design by: sjs	Checked by:

URS

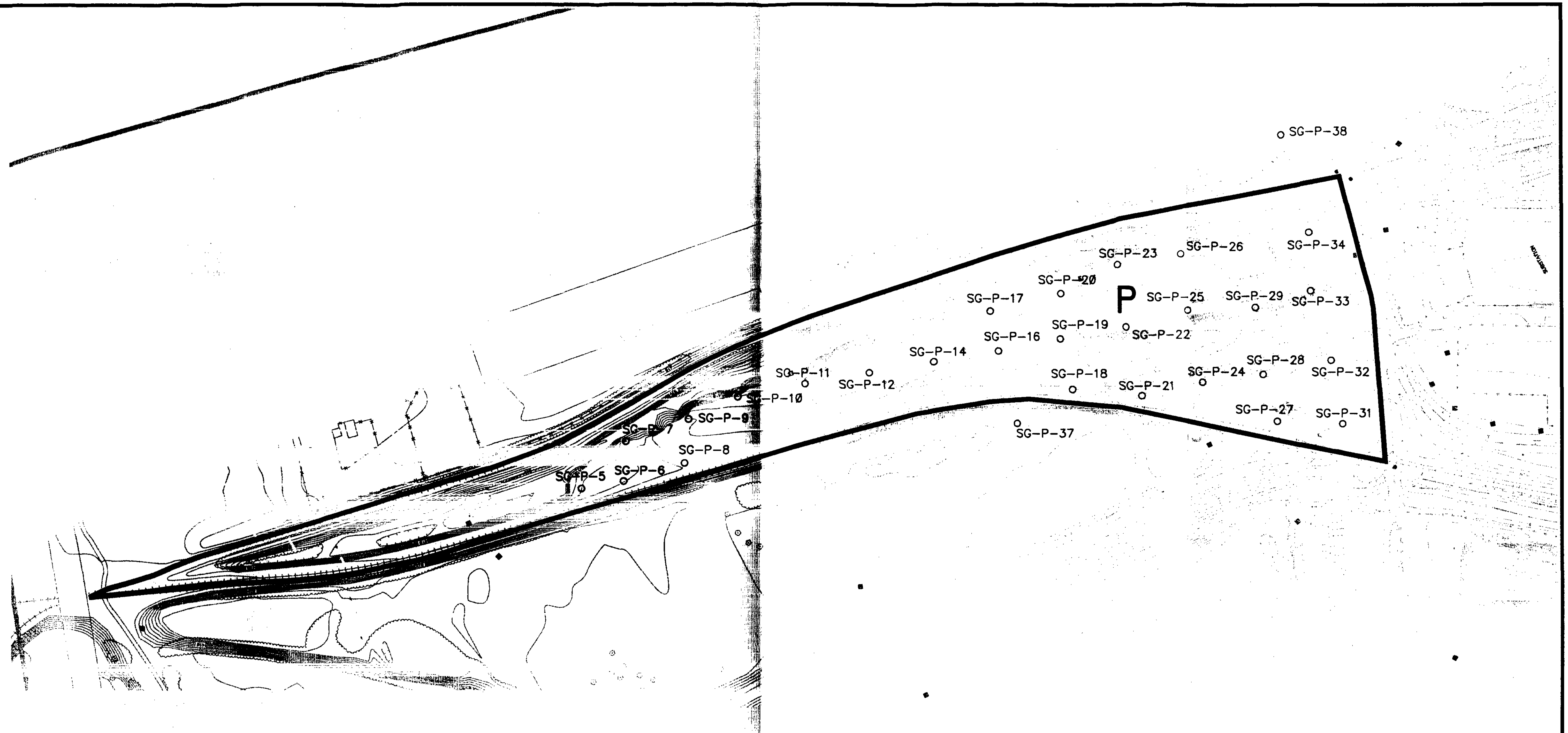


LEGEND

○ Soil Gas Screening Locations

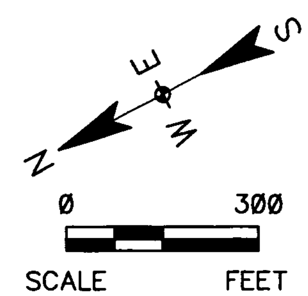
SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site O Soil Gas	FIG. NO. 3-3a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-3A 3-30.DWG Last edited: DEC. 15, 03 @ 6:17 p.m. by: DJDEGUIO



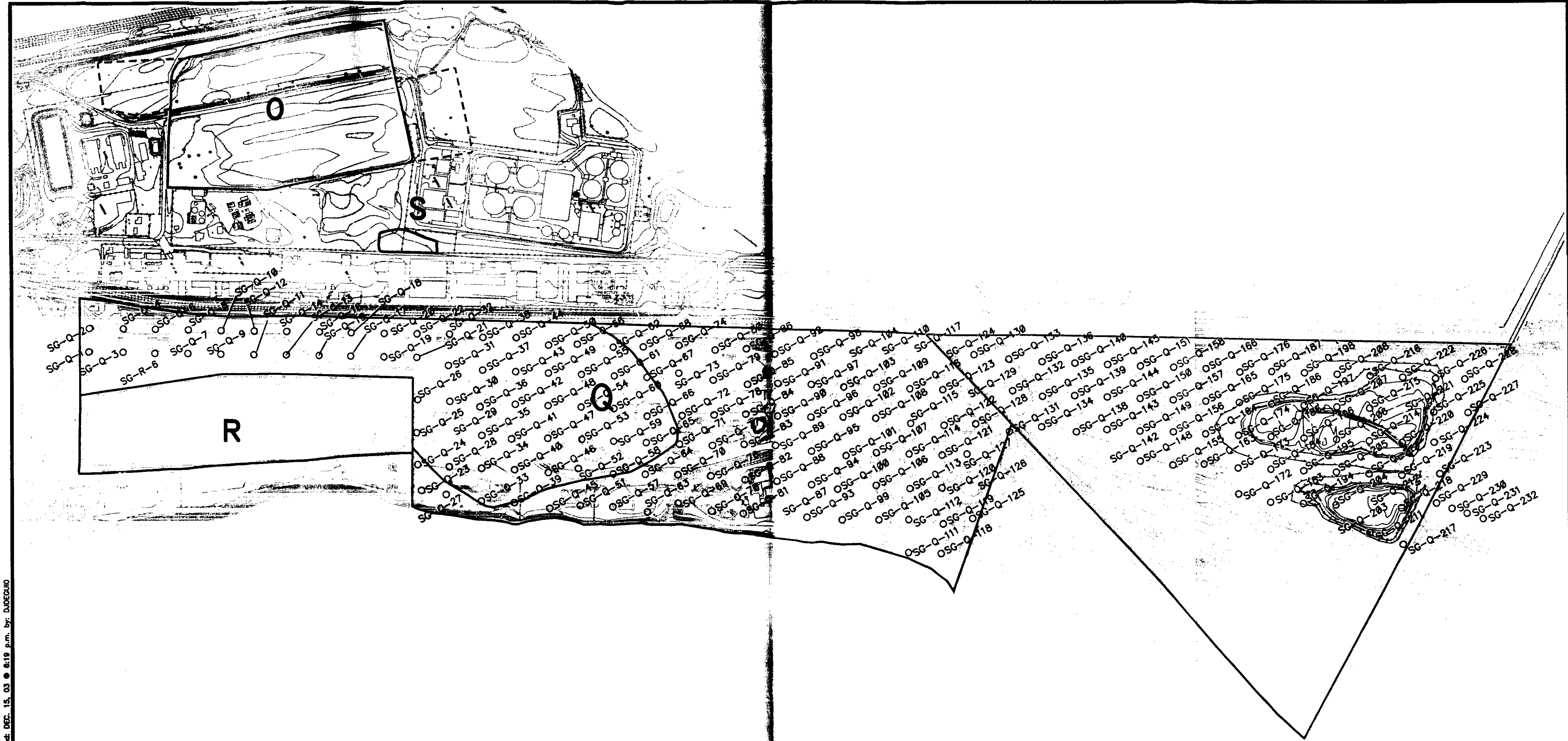
LEGEND

○ Soil Gas Screening Locations



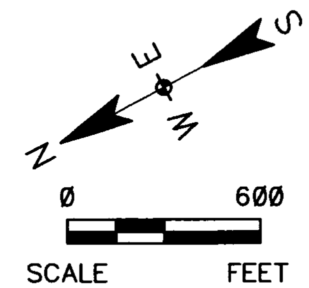
SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site P Soil Gas
FIG. NO.	3-3b

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-3A 3-30.DWG Last edited: DEC. 15, 03 @ 6:17 p.m. by: DJDEGUIO



LEGEND

○ Soil Gas Screening Locations



SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Q Soil Gas	FIG. NO. 3-3c

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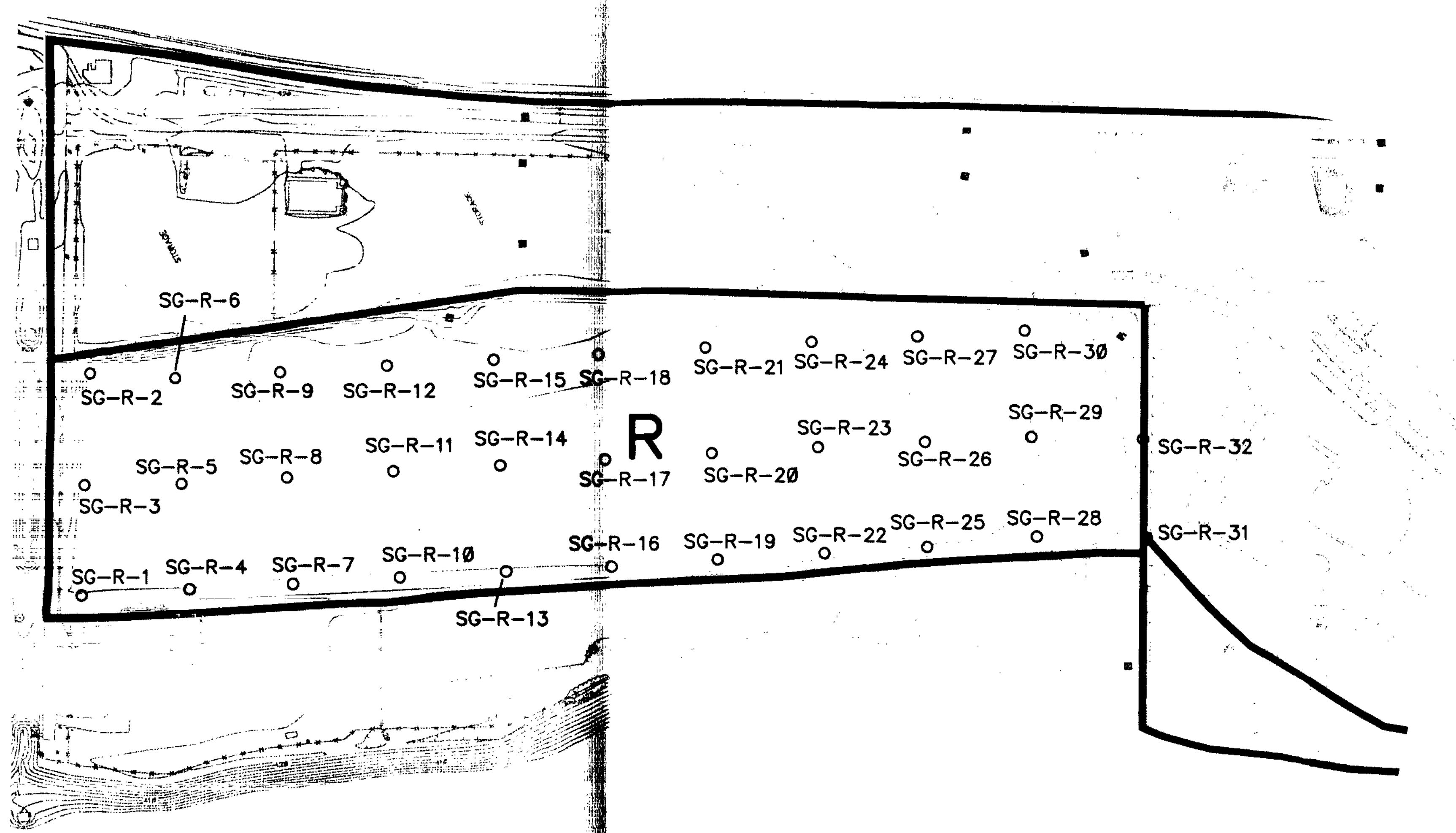
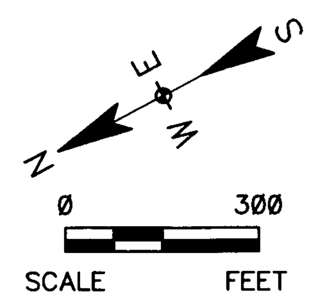


LEGEND

○ Soil Gas Screening Locations



SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site R Soil Gas
FIG. NO.	3-3d

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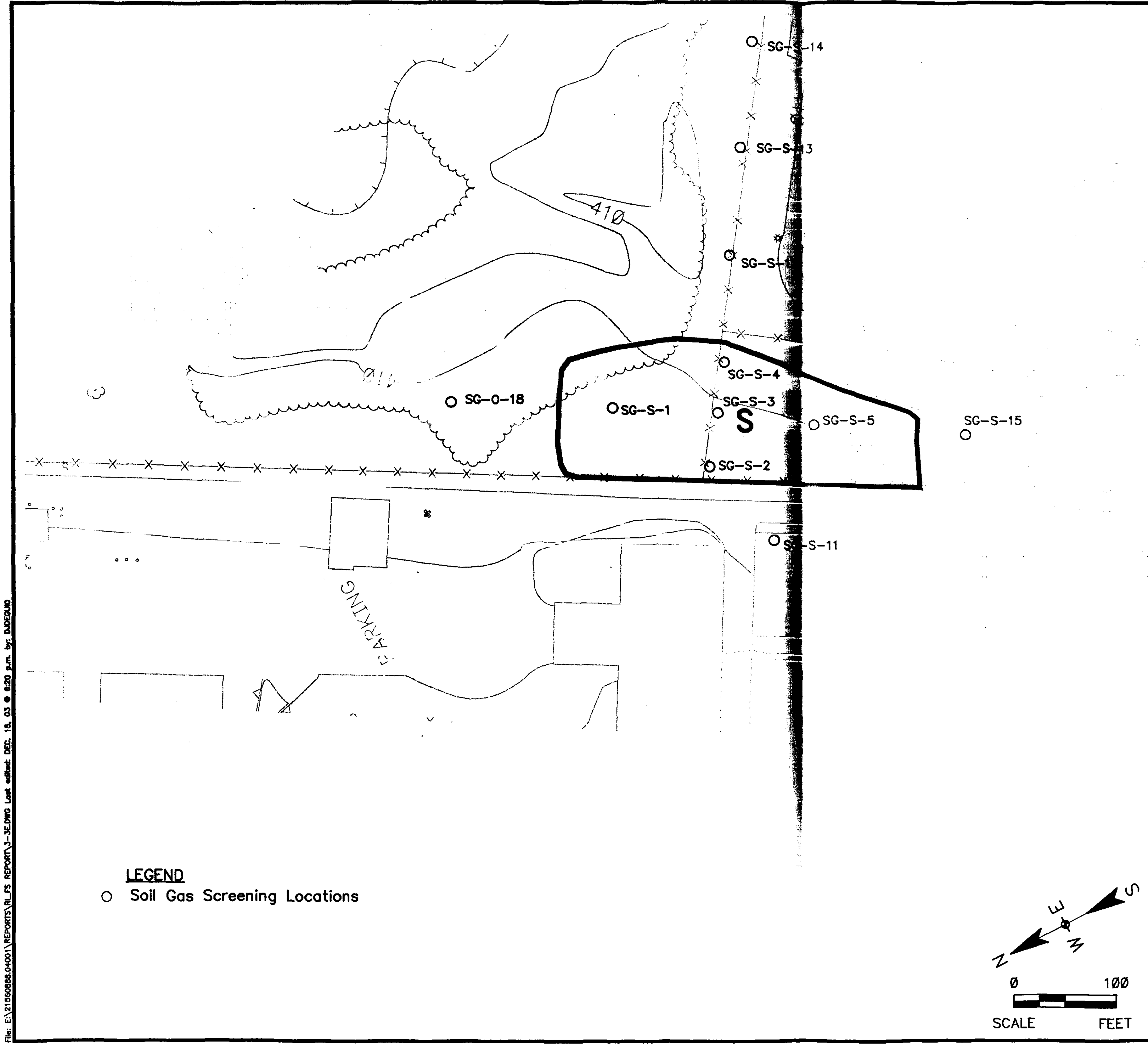

SAUGET AREA 2
RI/FS
SAUGET ILLINOIS

PROJECT NO. 21560888.07001

URS

DRN. BY: djd 4/2/03
DSGN. BY: kh
CHKD. BY:

Site S
Soil Gas

FIG. NO. 3-3e

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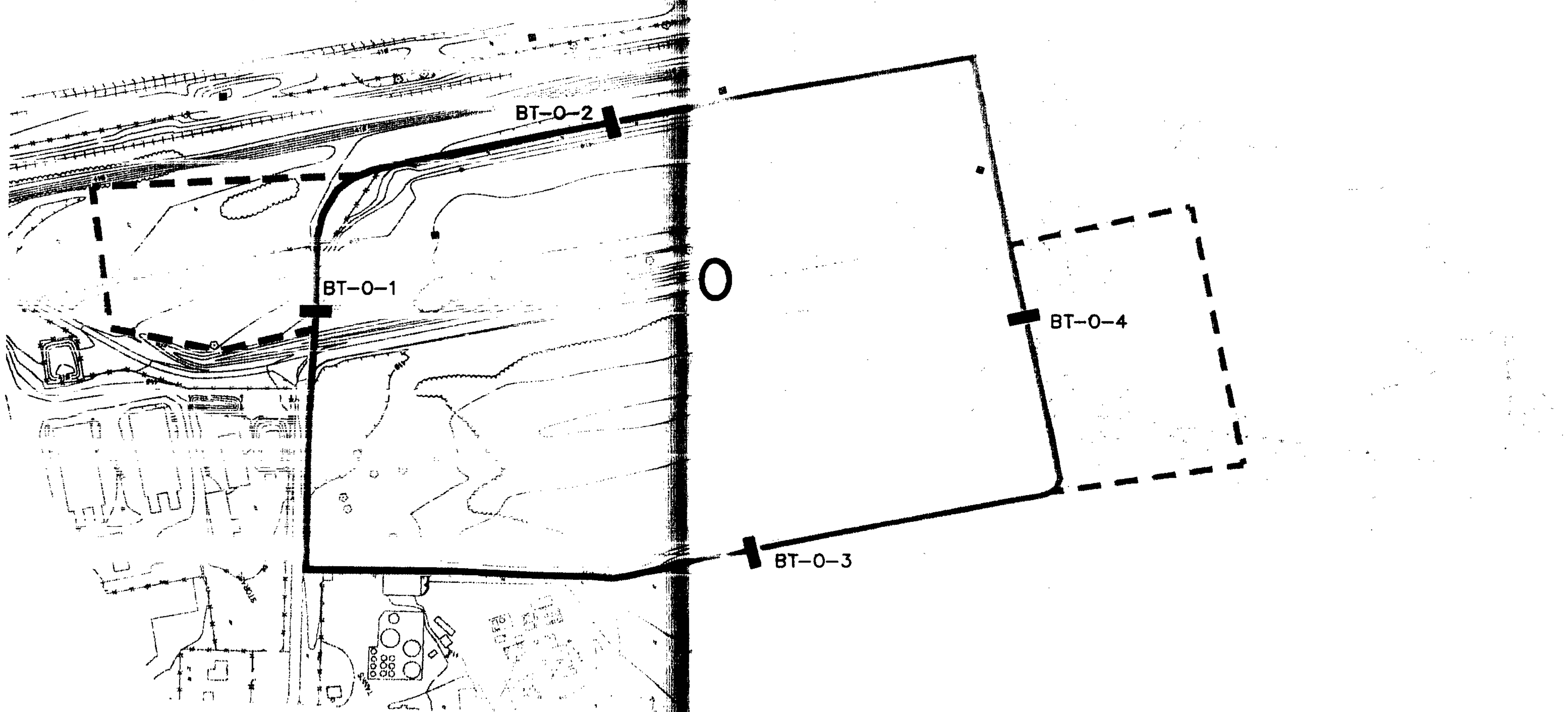
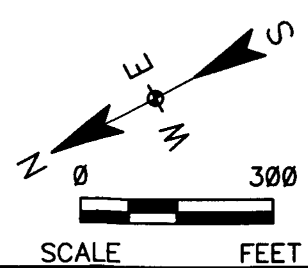


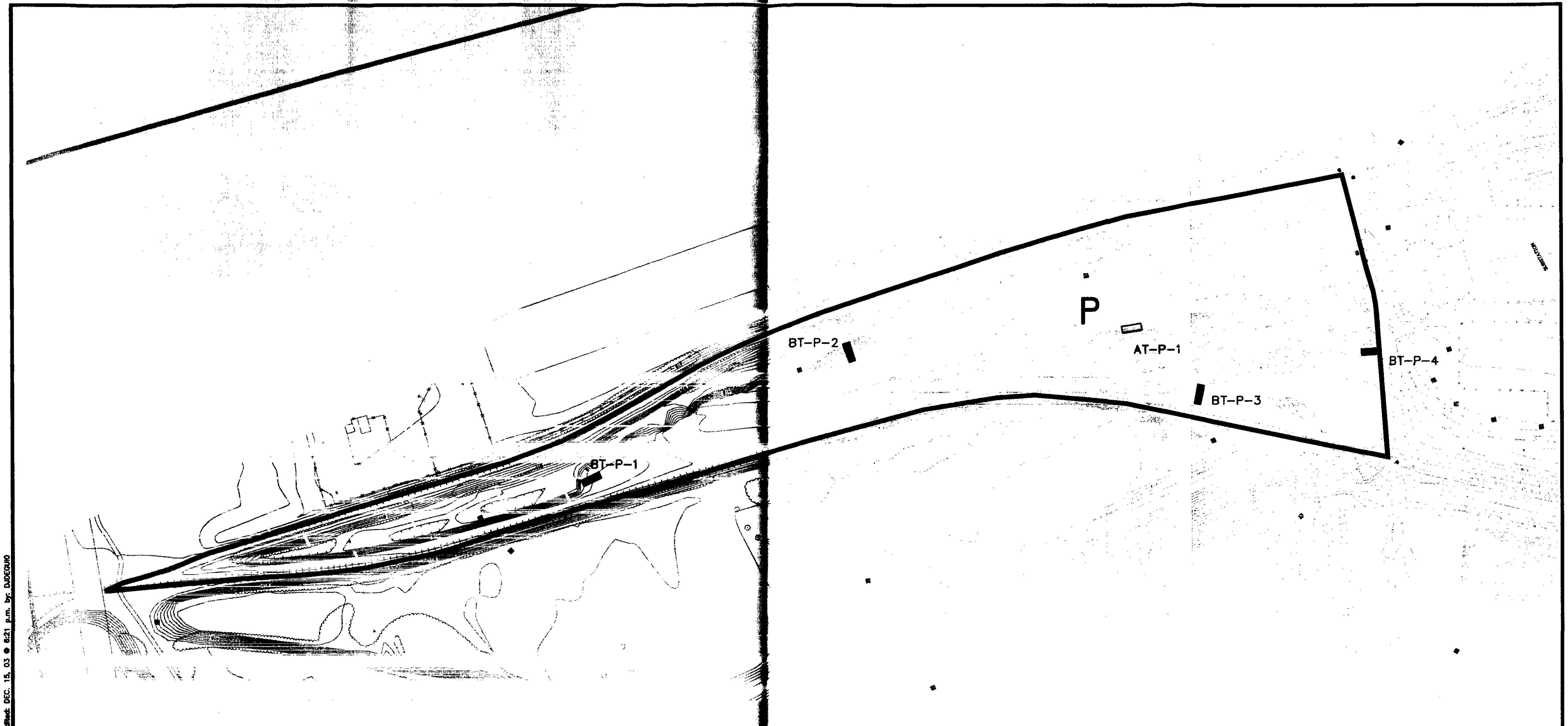
LEGEND

Boundary Trench Location



SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site O Test Trenches	FIG. NO. 3-4a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-4A 3-4O.DWG Last edited: DEC. 15, 03 @ 8:21 p.m. by: DJDEGUIO



LEGEND

Boundary Trench Location

Anomaly Trench Location

N E S W

Ø 300

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site P Test Trenches	FIG. NO. 3-4b

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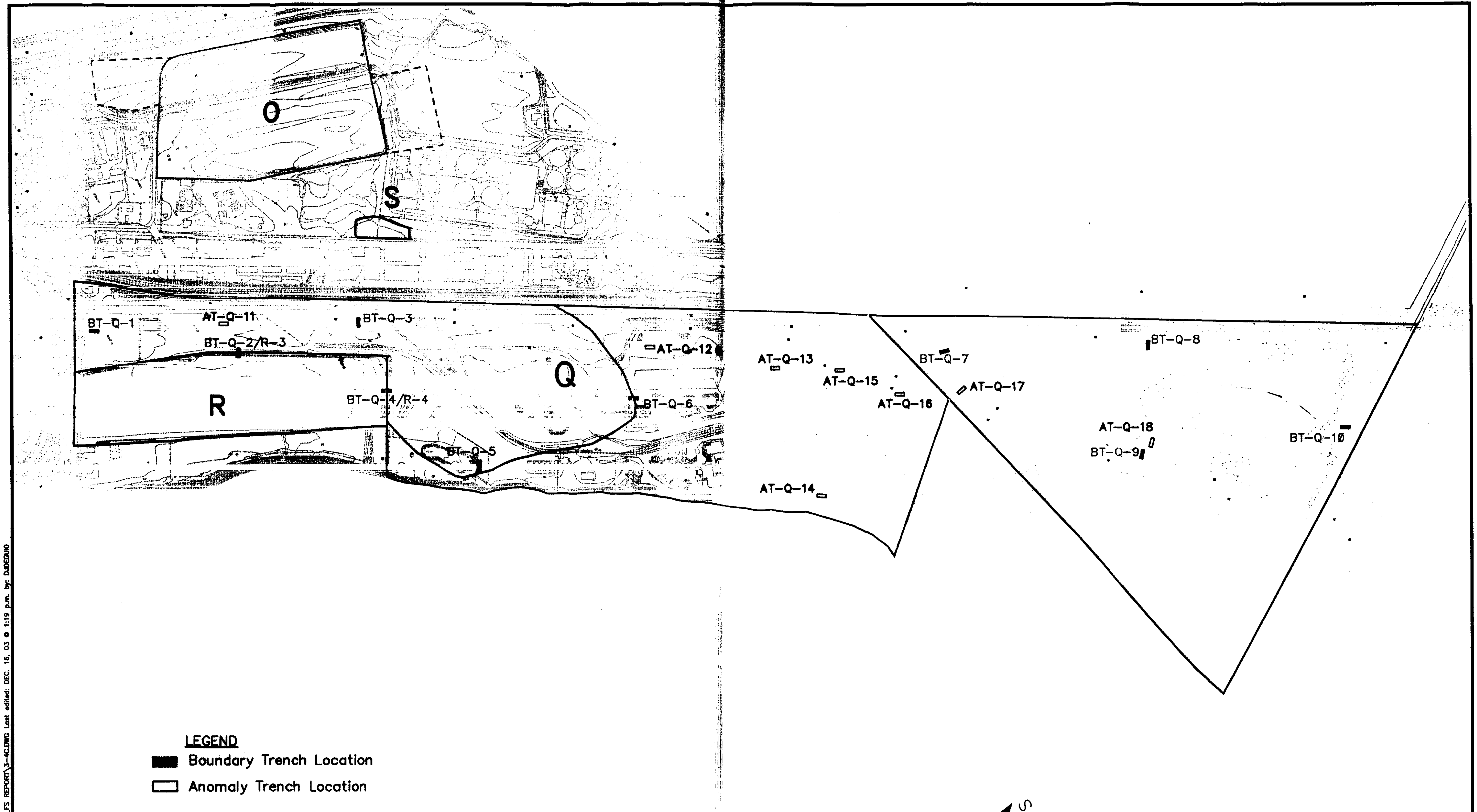

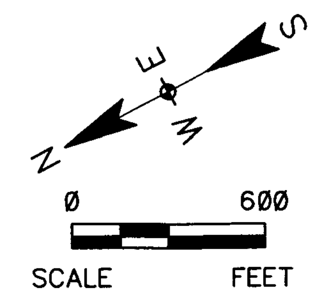

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Q Test Trenches	FIG. NO. 3-4c

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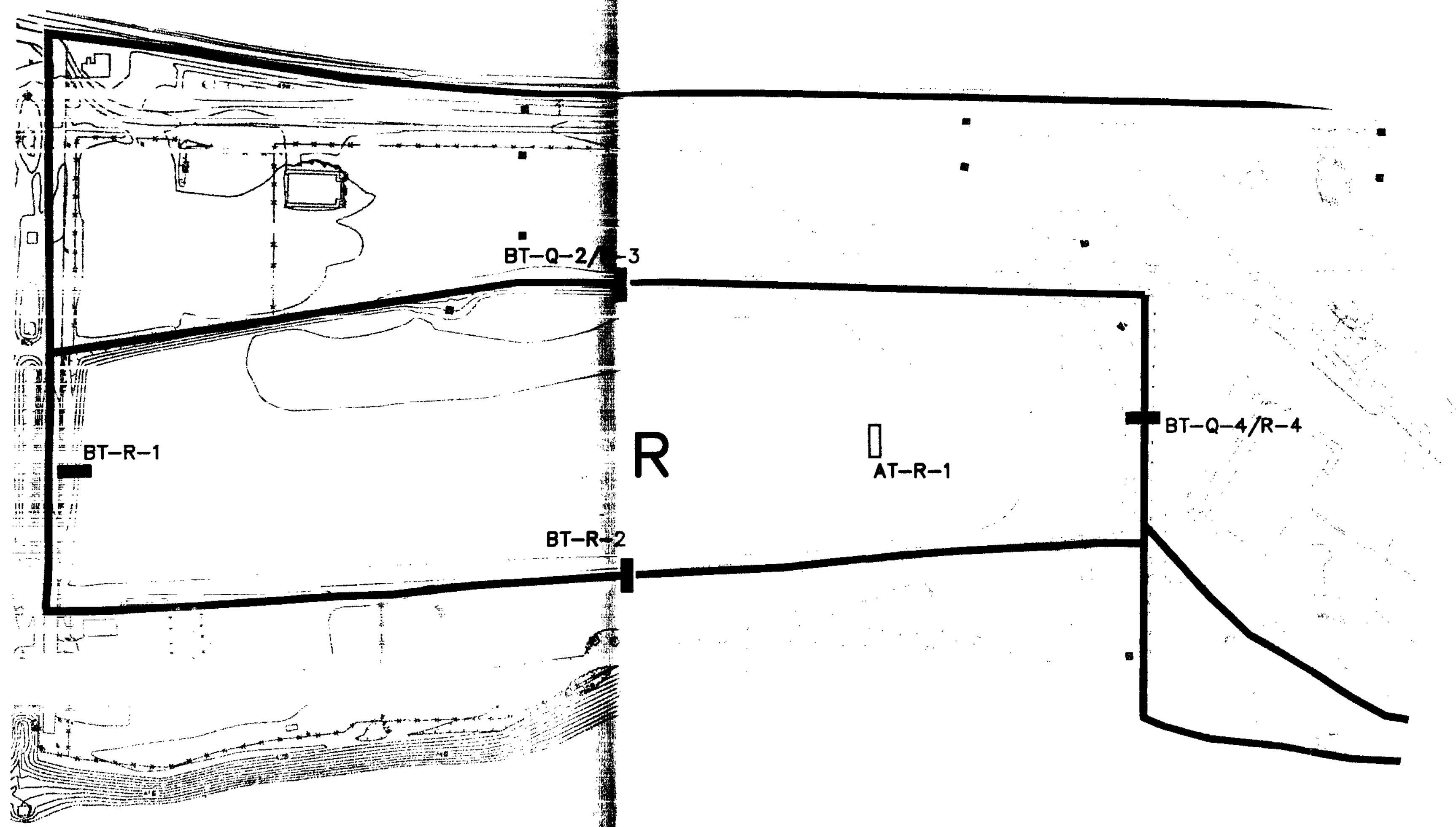

LEGEND

Boundary Trench Location

Anomaly Trench Location

N E S W

Ø 300

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site R Test Trenches
FIG. NO.	3-4d

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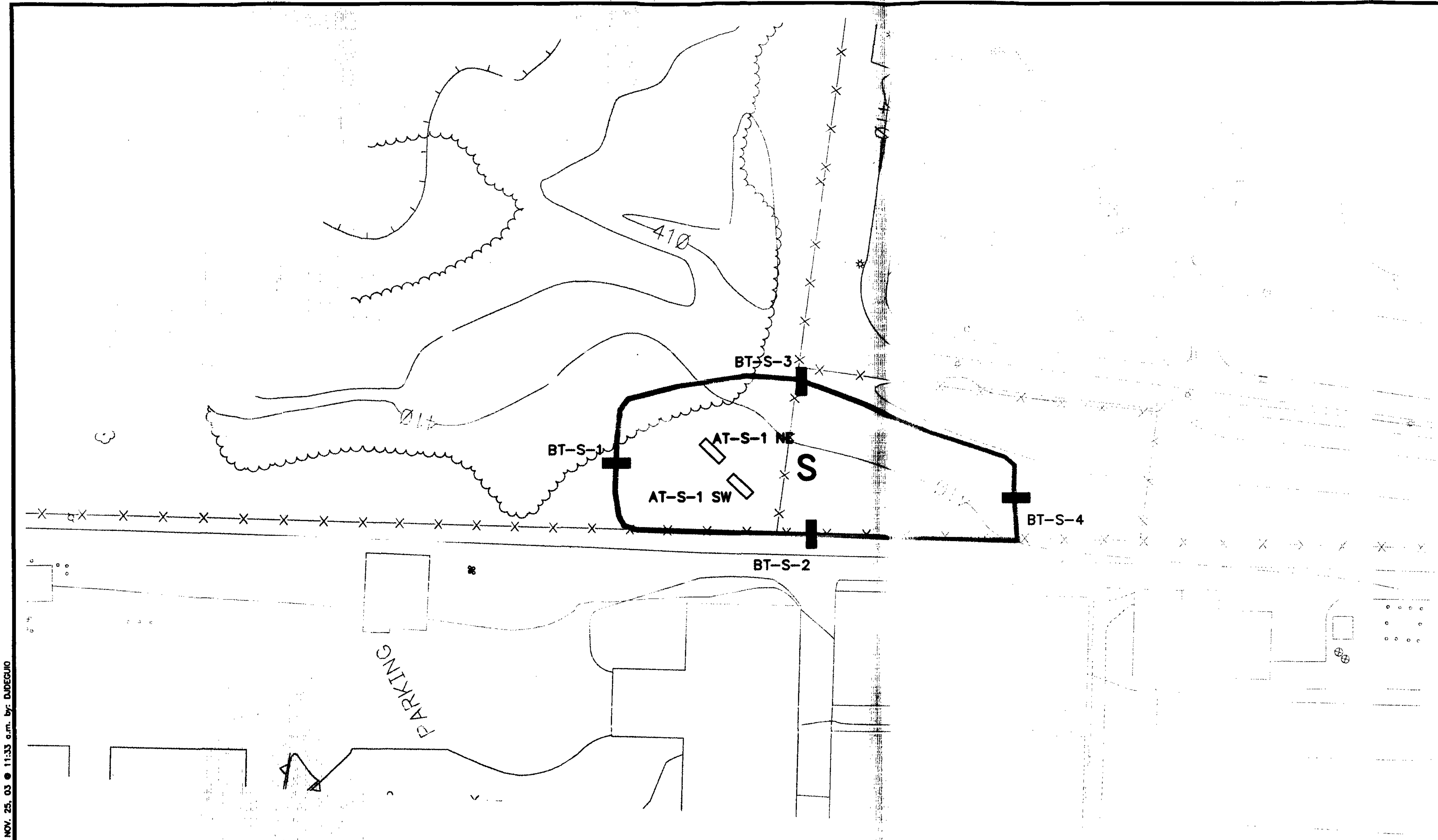

LEGEND

Boundary Trench Location

Anomaly Trench Location

N E S W

0 100

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site S Test Trenches
FIG. NO. 3-4e	

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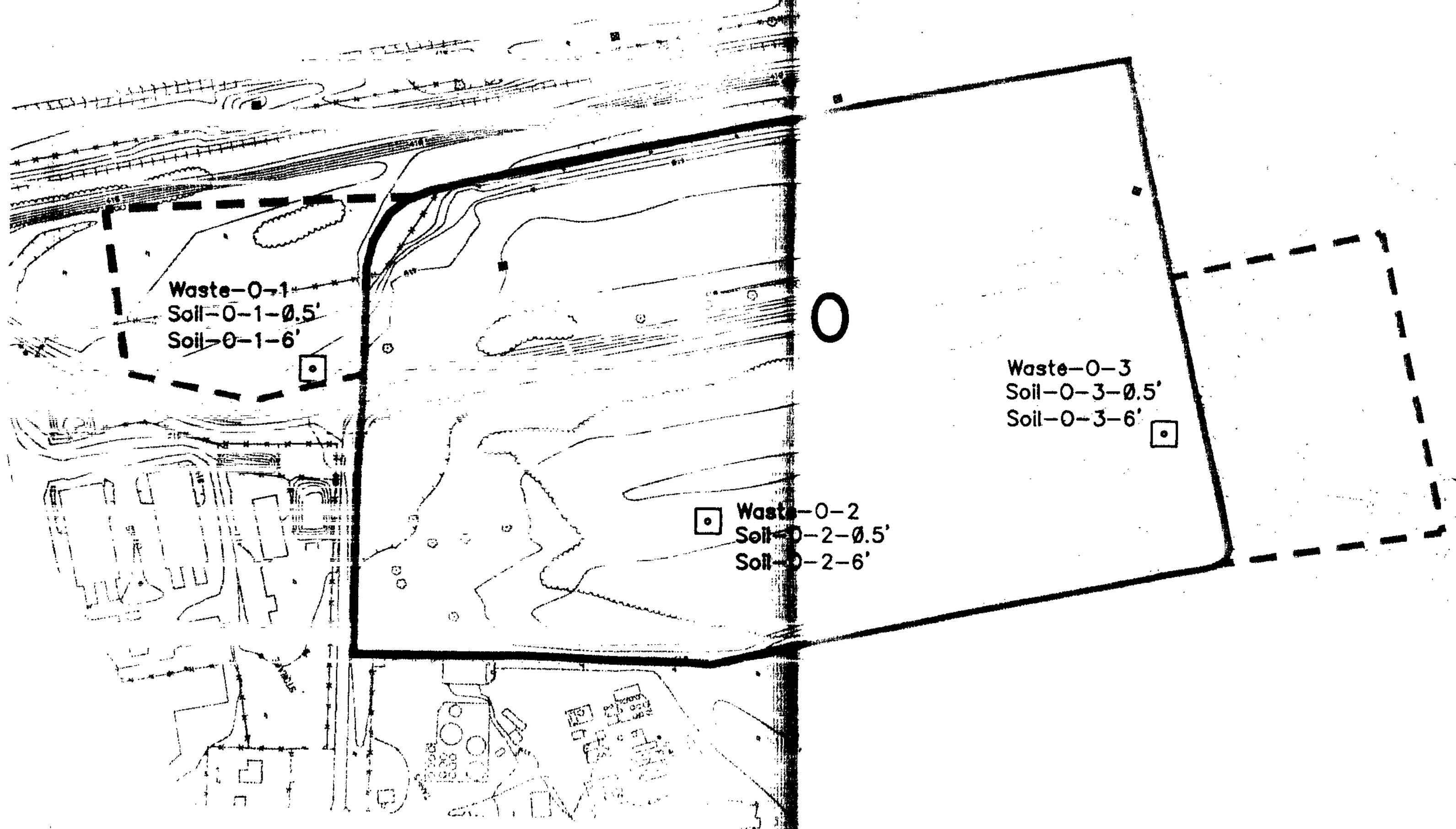

LEGEND

⊡ Waste Characterization Boring/Soil Sample Location

N E S W

0 300

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site O Waste and Soil Sampling Locations	FIG. NO. 3-5a

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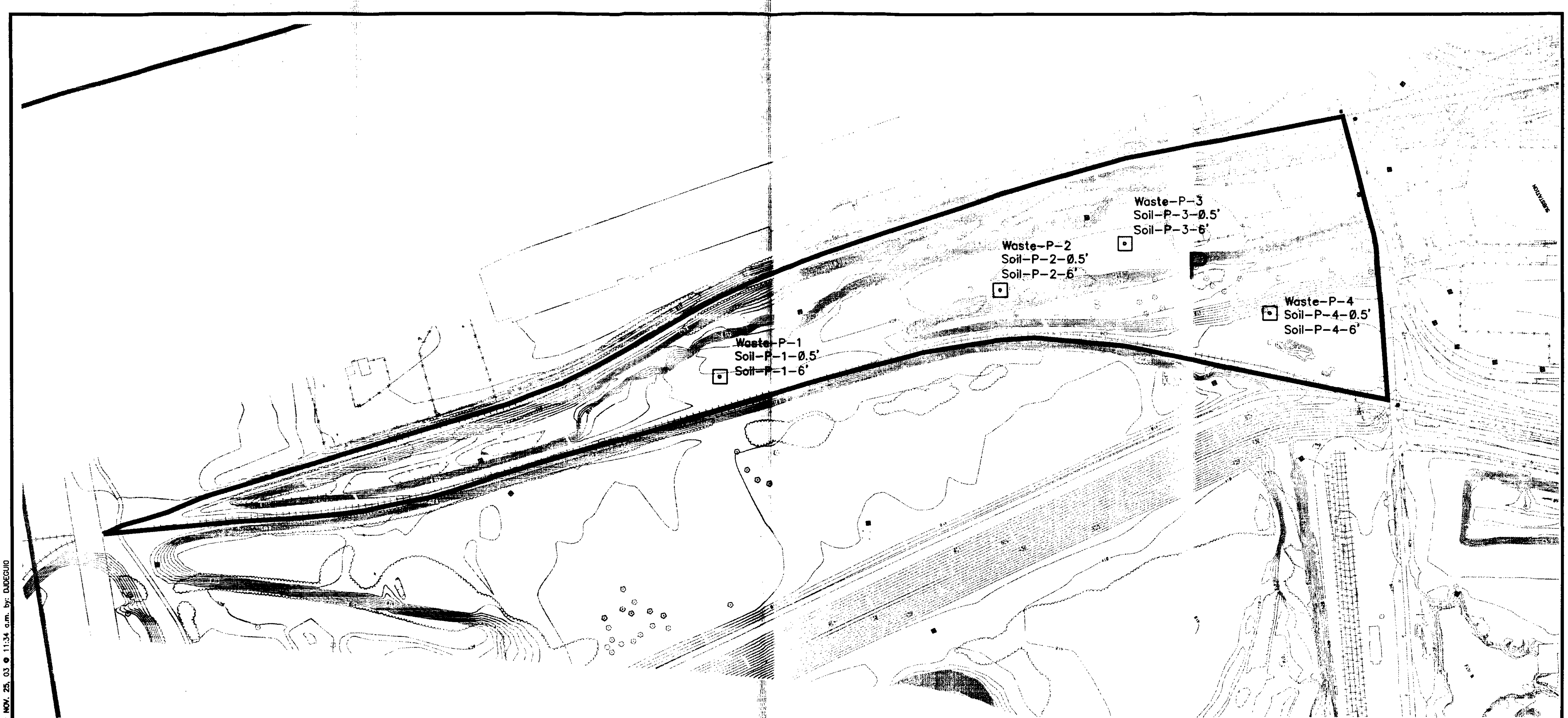


LEGEND

⊡ Waste Characterization Boring/Soil Sample Location

S E W N

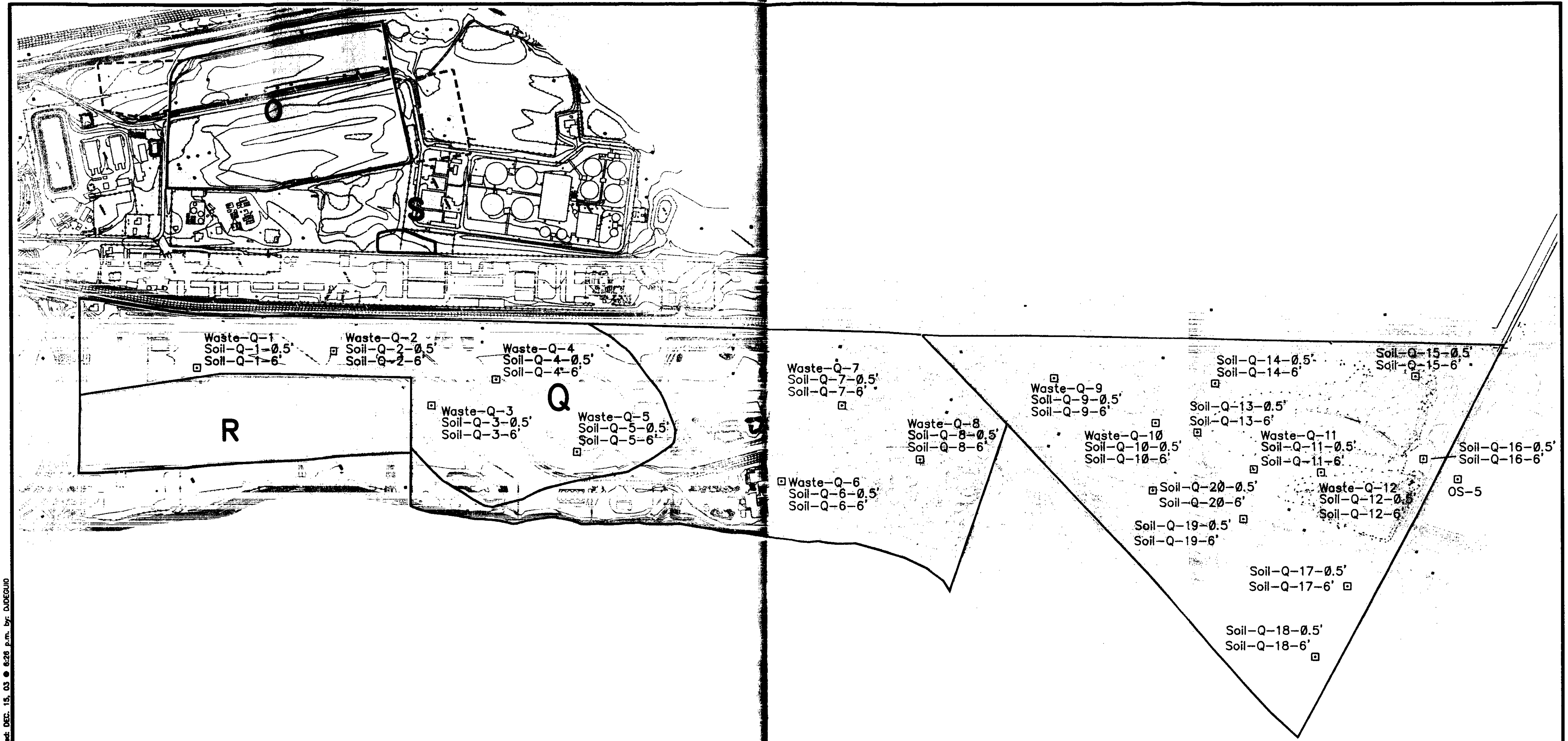
0 300

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	

DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site P Waste and Soil Sampling Locations	FIG. NO. 3-5b

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-5A 3-5D.DWG Last edited: NOV. 25, 03 @ 11:34 a.m. by: DJDEGUIO

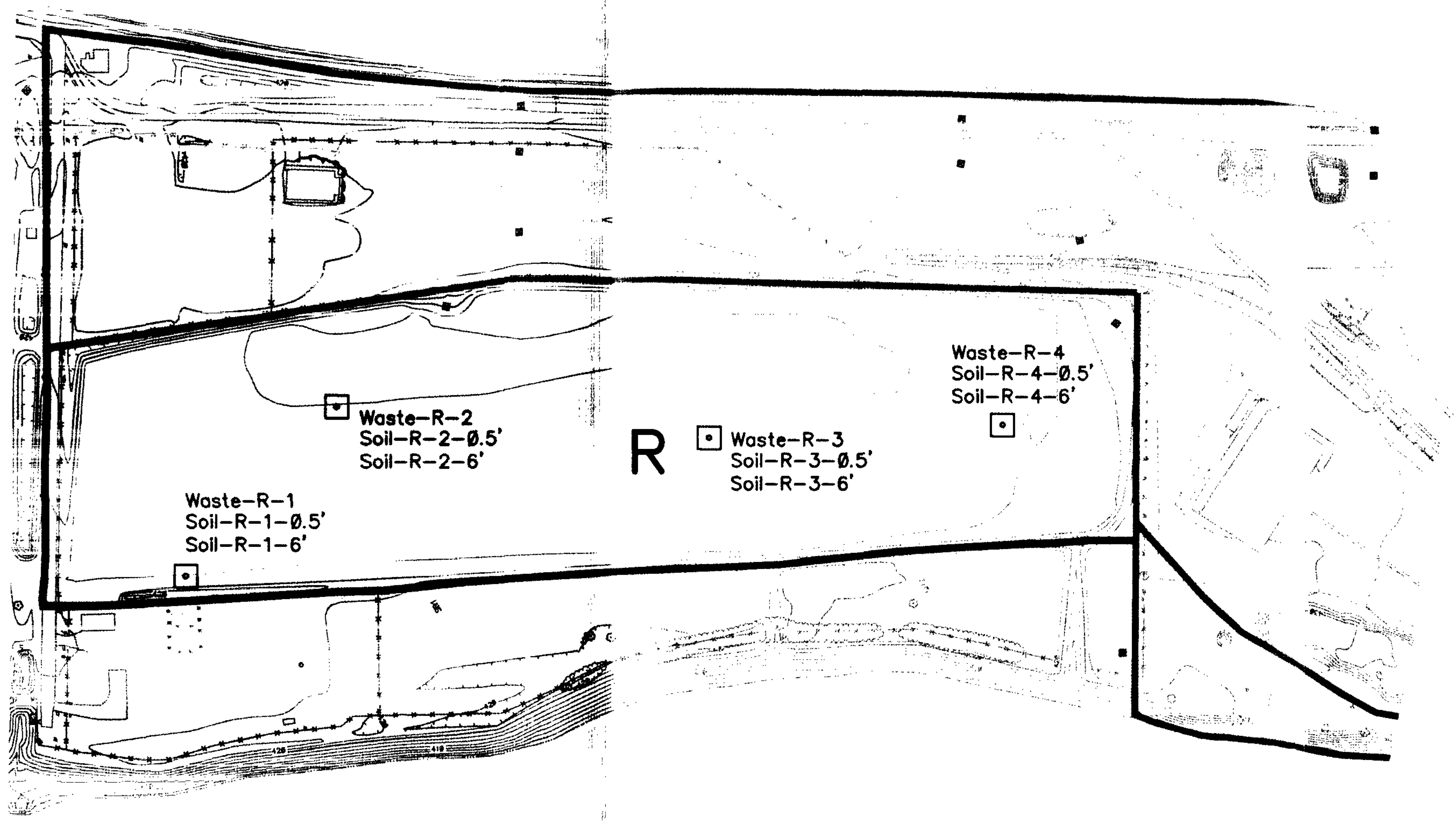


LEGEND

⊡ Waste Characterization Boring/Soil Sample Location

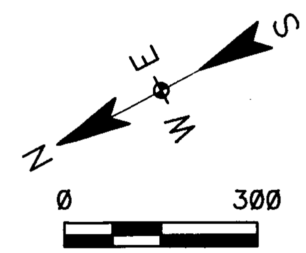
SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Q Waste and Soil Sampling Locations — FIG. NO. 3-5c

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-5C.DWG Last edited: DEC. 15, 03 @ 6:26 p.m. by: DJDEGUIO



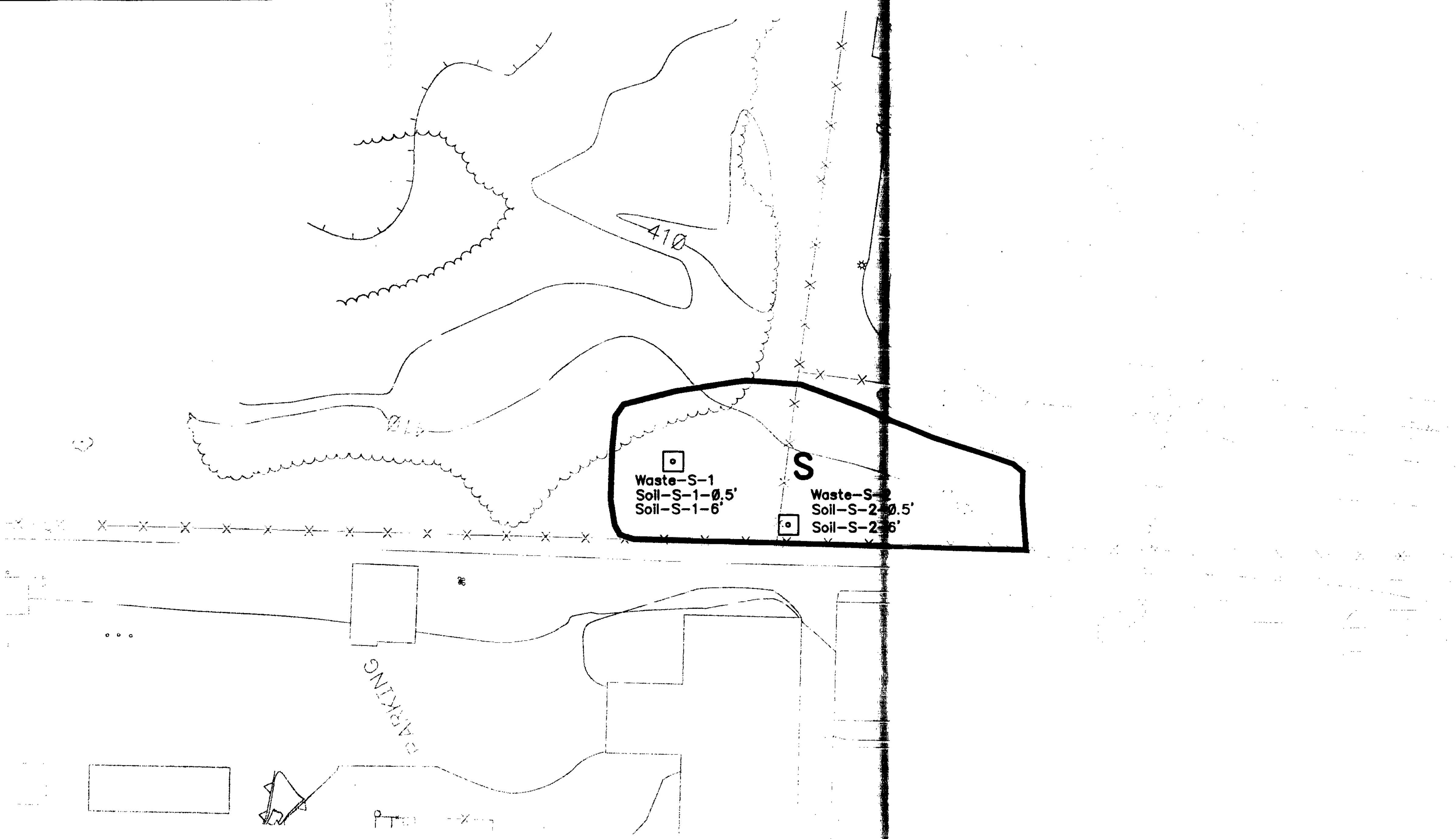
LEGEND

⊡ Waste Characterization Boring/Soil Sample Location



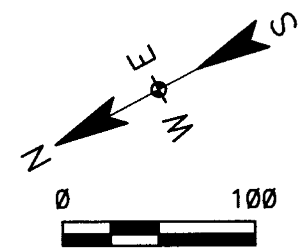
SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site R Waste and Soil Sampling Locations	FIG. NO. 3-5d

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-5A 3-5D.DWG Last edited: NOV. 25, 03 @ 11:35 a.m. by: DJDEGUIO



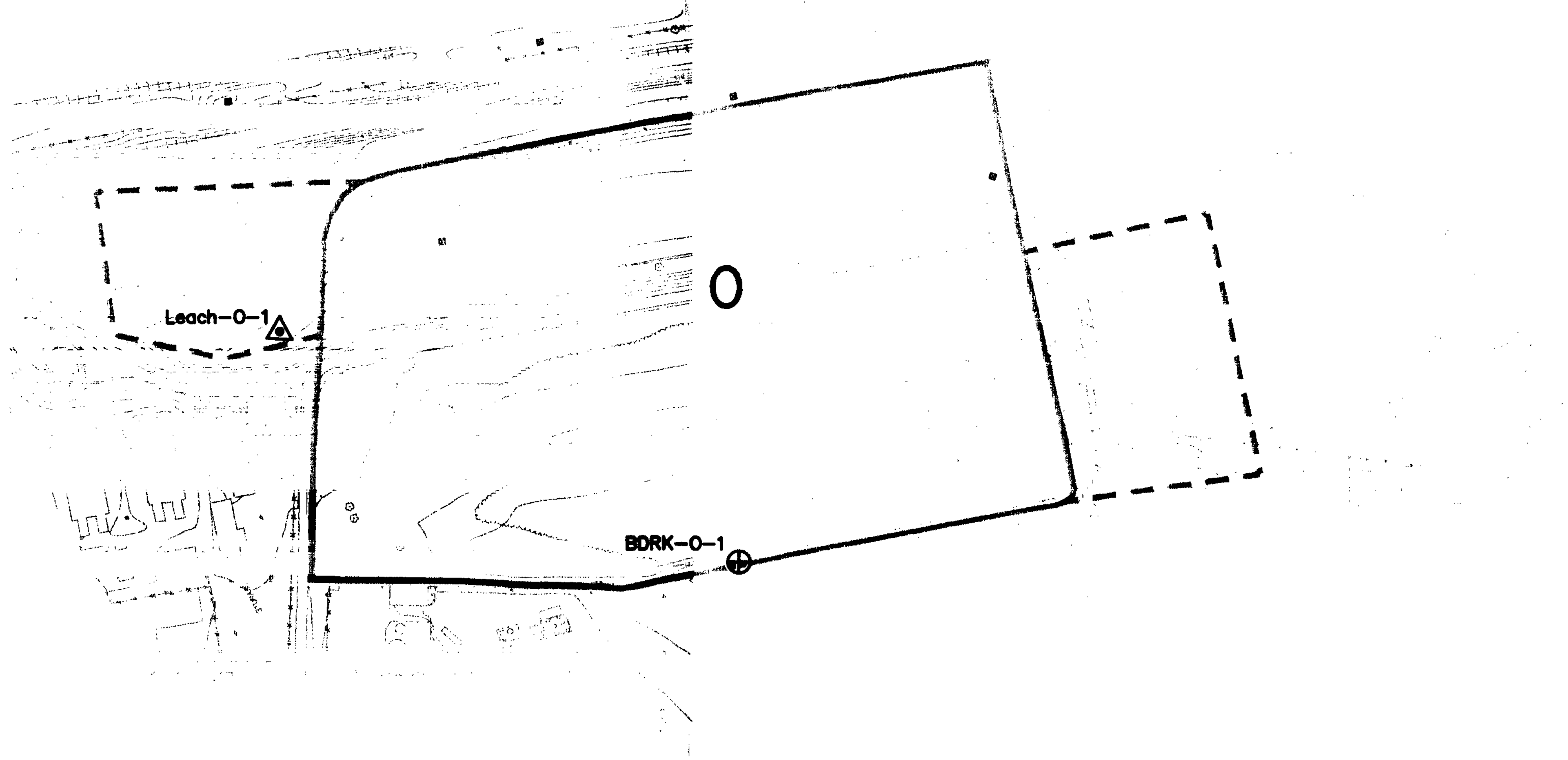
LEGEND

⊡ Waste Characterization Boring/Soil Sample Location



SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site S Waste and Soil Sampling Locations
FIG. NO.	3-5e

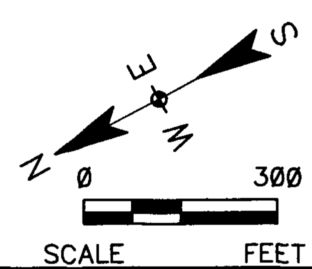
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-5E.DWG Last edited: DEC. 15, 03 @ 6:27 p.m. by: DJDEGUIO



LEGEND

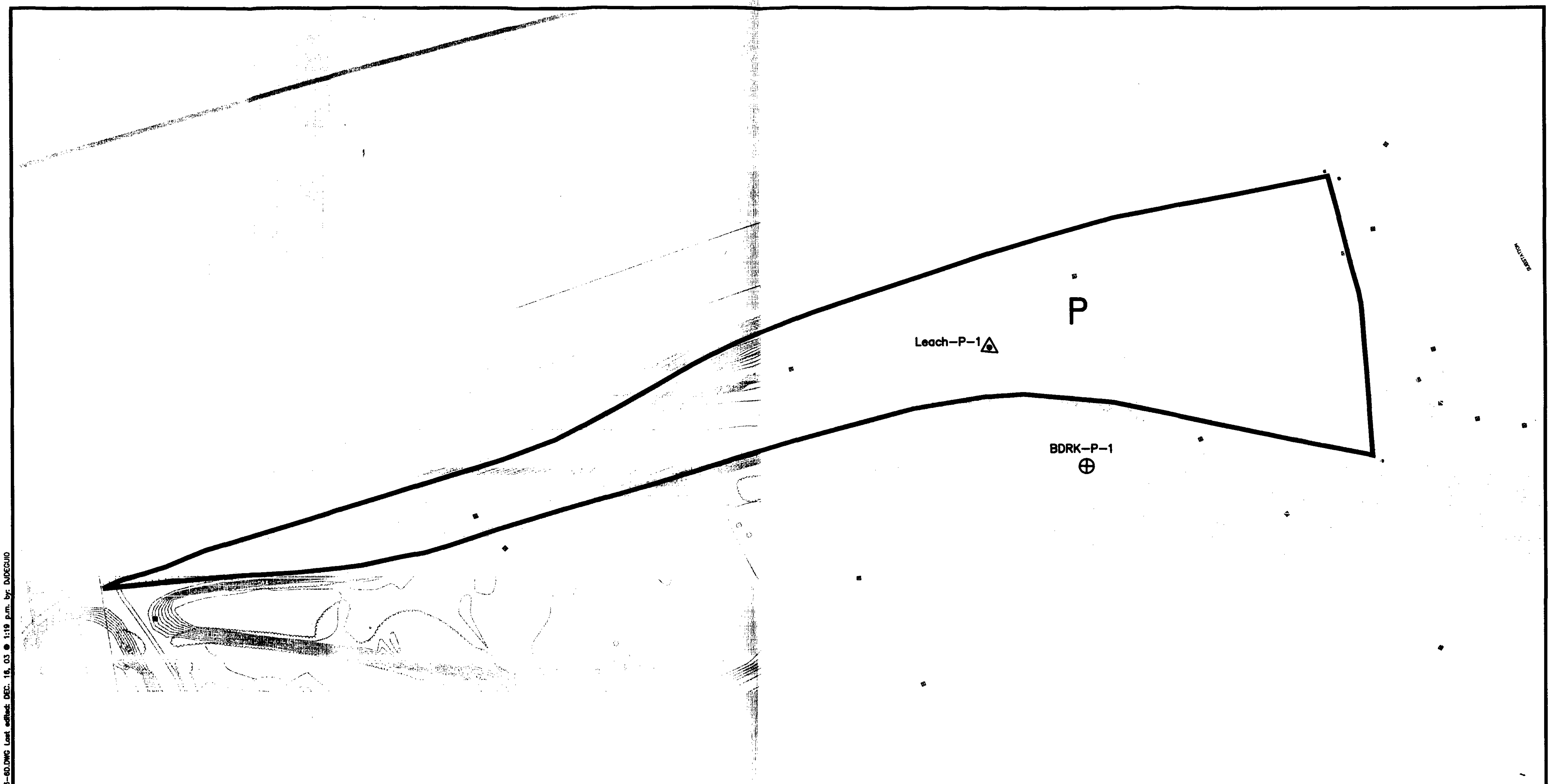
⊕ Bedrock Monitoring Well Location

Ⓐ Leachate Monitoring Well Location



SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site O Leachate and Bedrock Monitoring Well Locations
FIG. NO.	3-6a

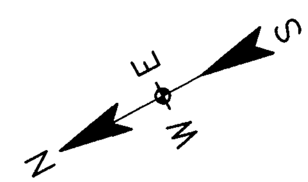
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-6A 3-6D.DWG Last edited: DEC. 16, 03 @ 1:19 p.m. by: DJDEGUIO



LEGEND

⊕ Bedrock Monitoring Well Location

△ Leachate Monitoring Well Location



Ø 300

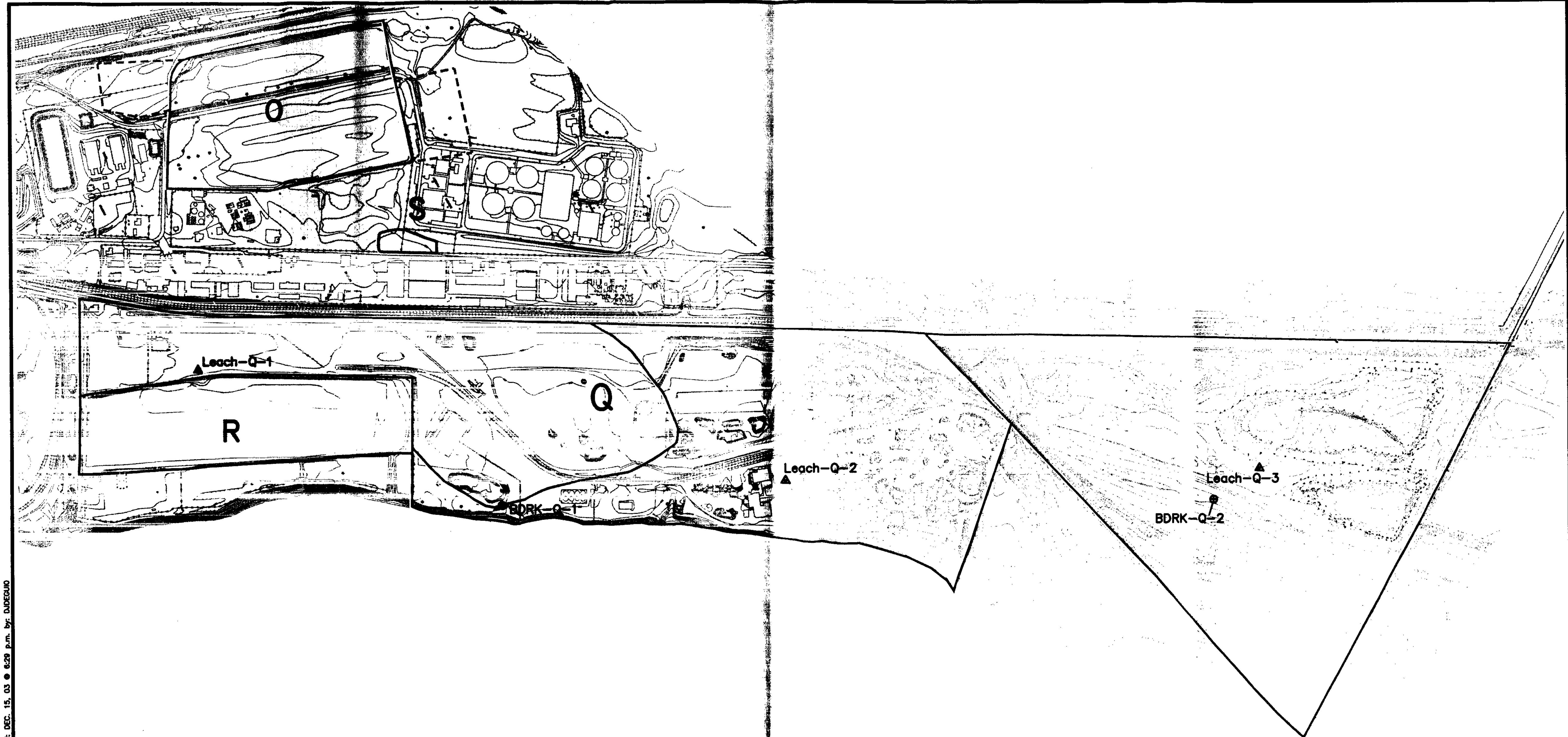
SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site P Leachate and Bedrock Monitoring Well Locations	FIG. NO. 3–6b

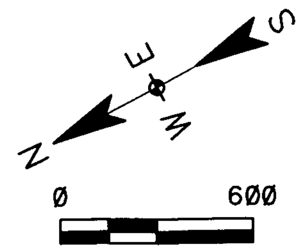
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-6A 3-6D.DWG Last edited: DEC. 16, 03 @ 1:19 p.m. by: DJDEGUIO



LEGEND

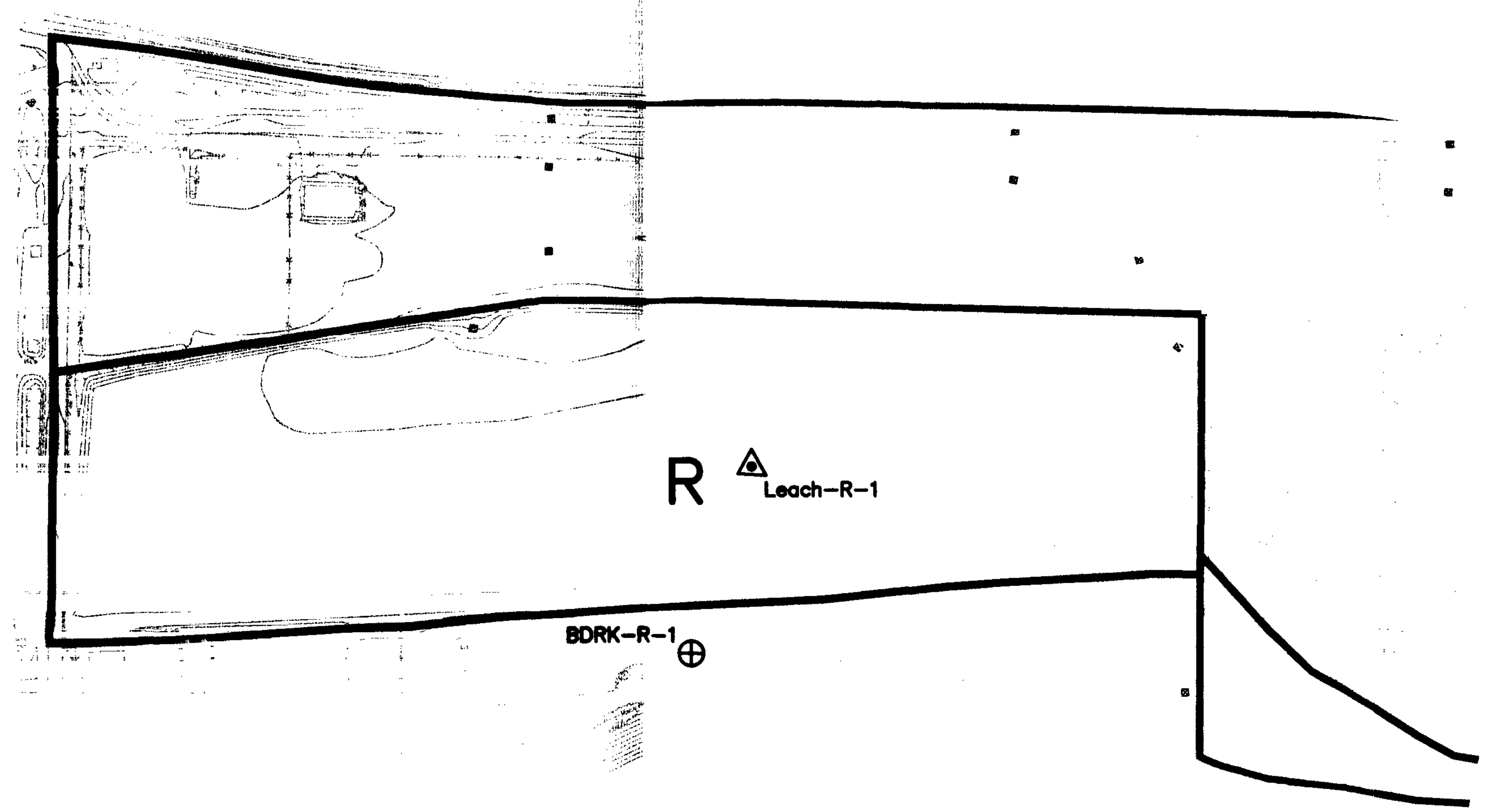
⊕ Bedrock Monitoring Well Location

▲ Leachate Monitoring Well Location



SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Q Leachate and Bedrock Monitoring Well Locations	FIG. NO. 3-6c

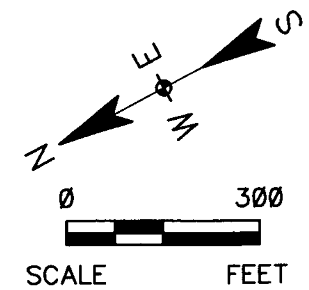
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-6C.DWG Last edited: DEC. 15, 03 @ 6:29 p.m. by: DJDEGUIO



LEGEND

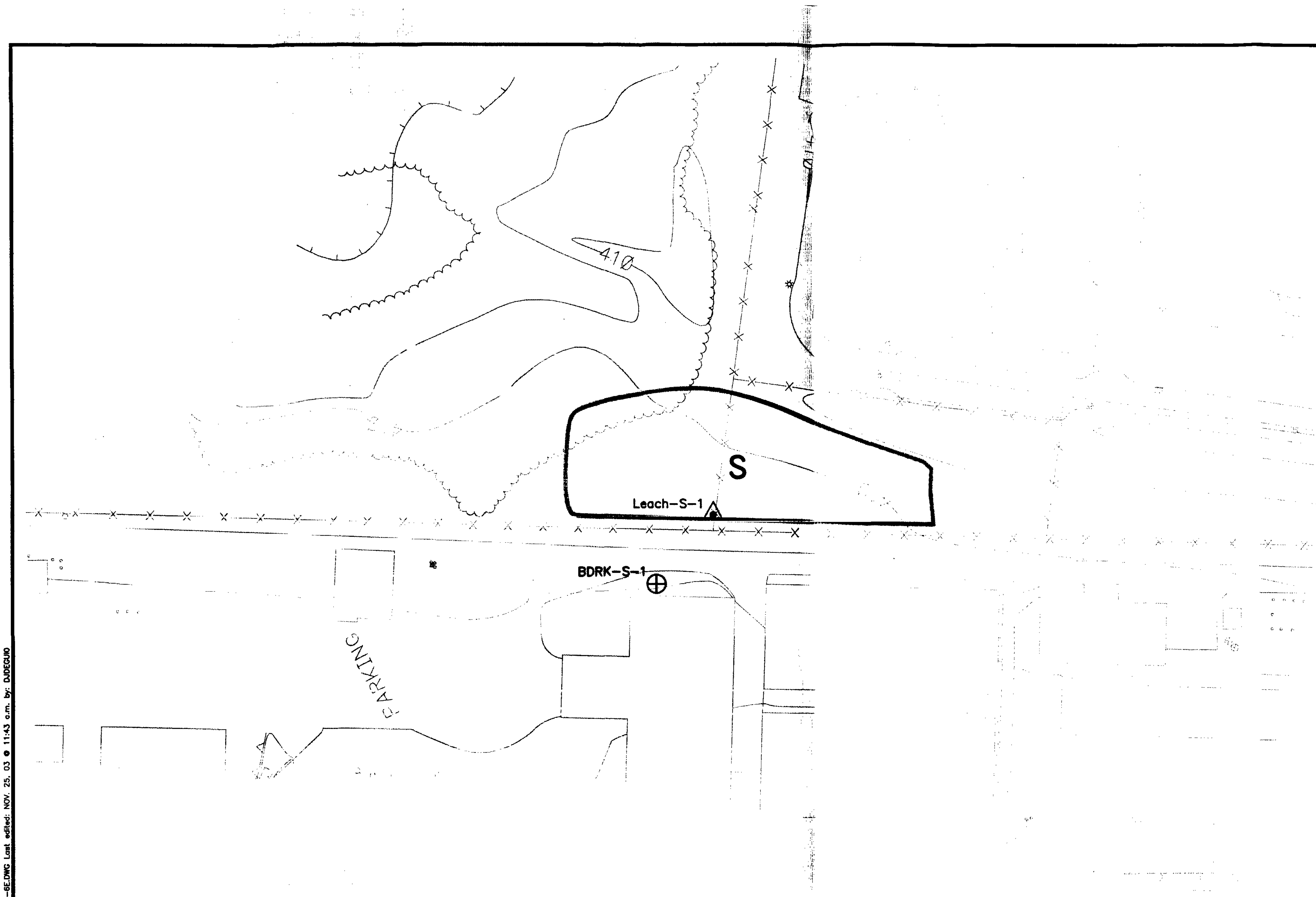
⊕ Bedrock Monitoring Well Location

△ Leachate Monitoring Well Location



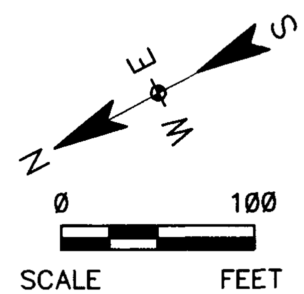
SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site R Leachate and Bedrock Monitoring Well Locations	FIG. NO. 3–6d

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3–6A 3–6D.DWG Last edited: DEC. 16, 03 @ 1:19 p.m. by: DJDEGUIO



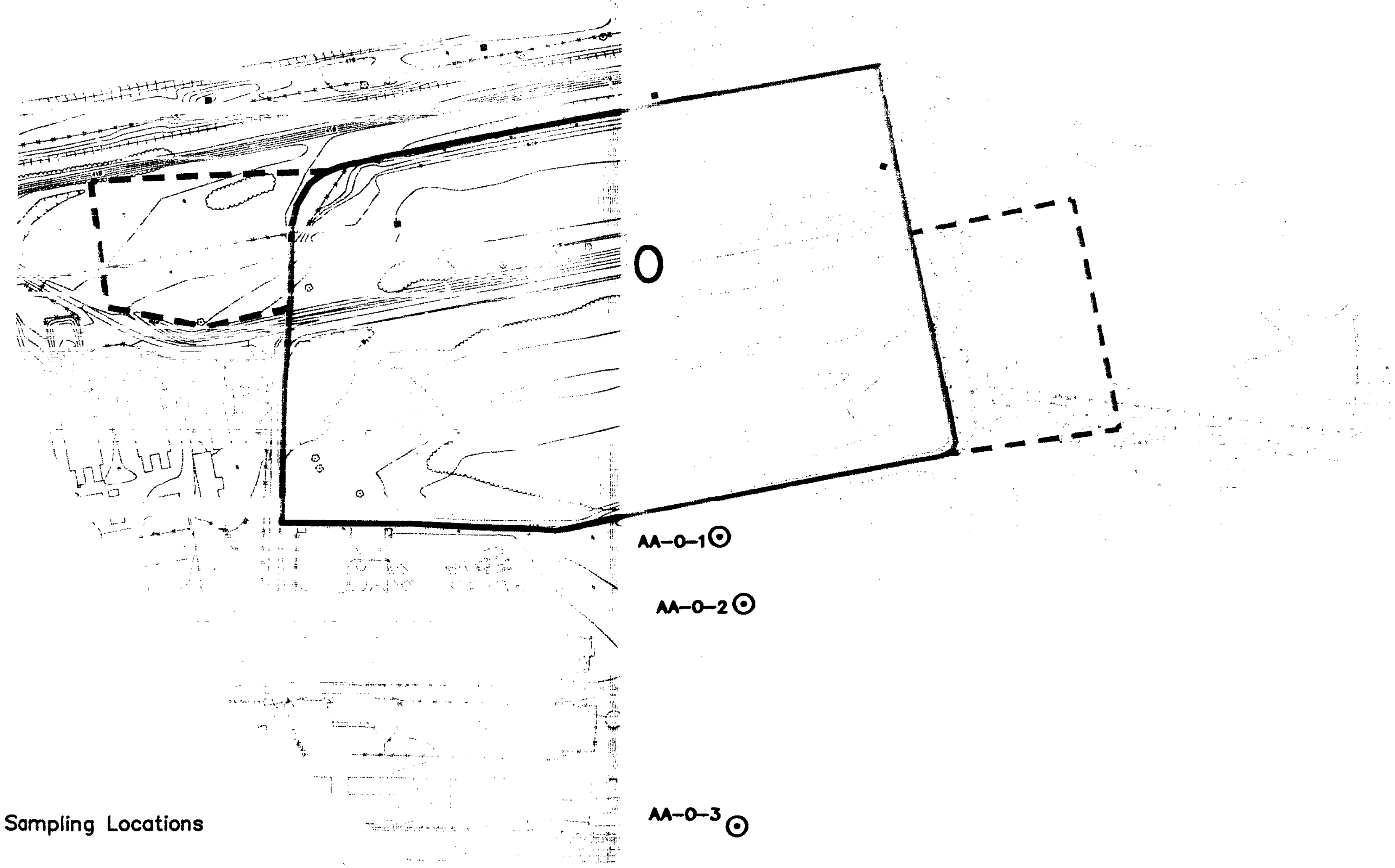
LEGEND

- ⊕ Bedrock Monitoring Well Location
- ◬ Leachate Monitoring Well Location



SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site S Leachate and Bedrock Monitoring Well Locations	FIG. NO. 3-6e

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-6E.DWG Last edited: NOV. 25, 03 @ 11:43 a.m. by: DJDEGUIO

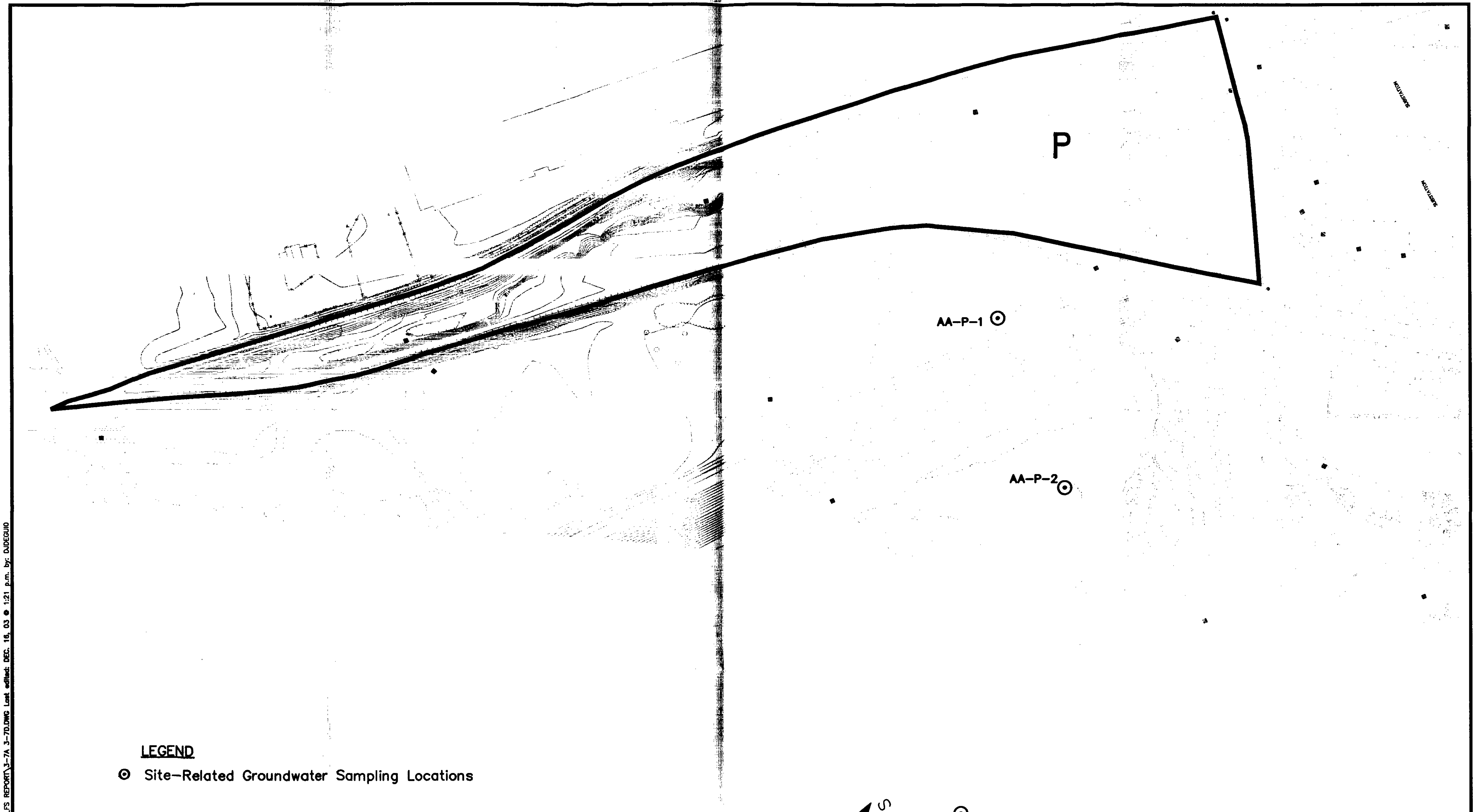


LEGEND

⊙ Site–Related Groundwater Sampling Locations

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site O Alluvial Aquifer Sample Locations — FIG. NO. 3–7a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-7A 3-7D.DWG Last edited: DEC. 16, 03 @ 1:21 p.m. by: DJDEGUIO

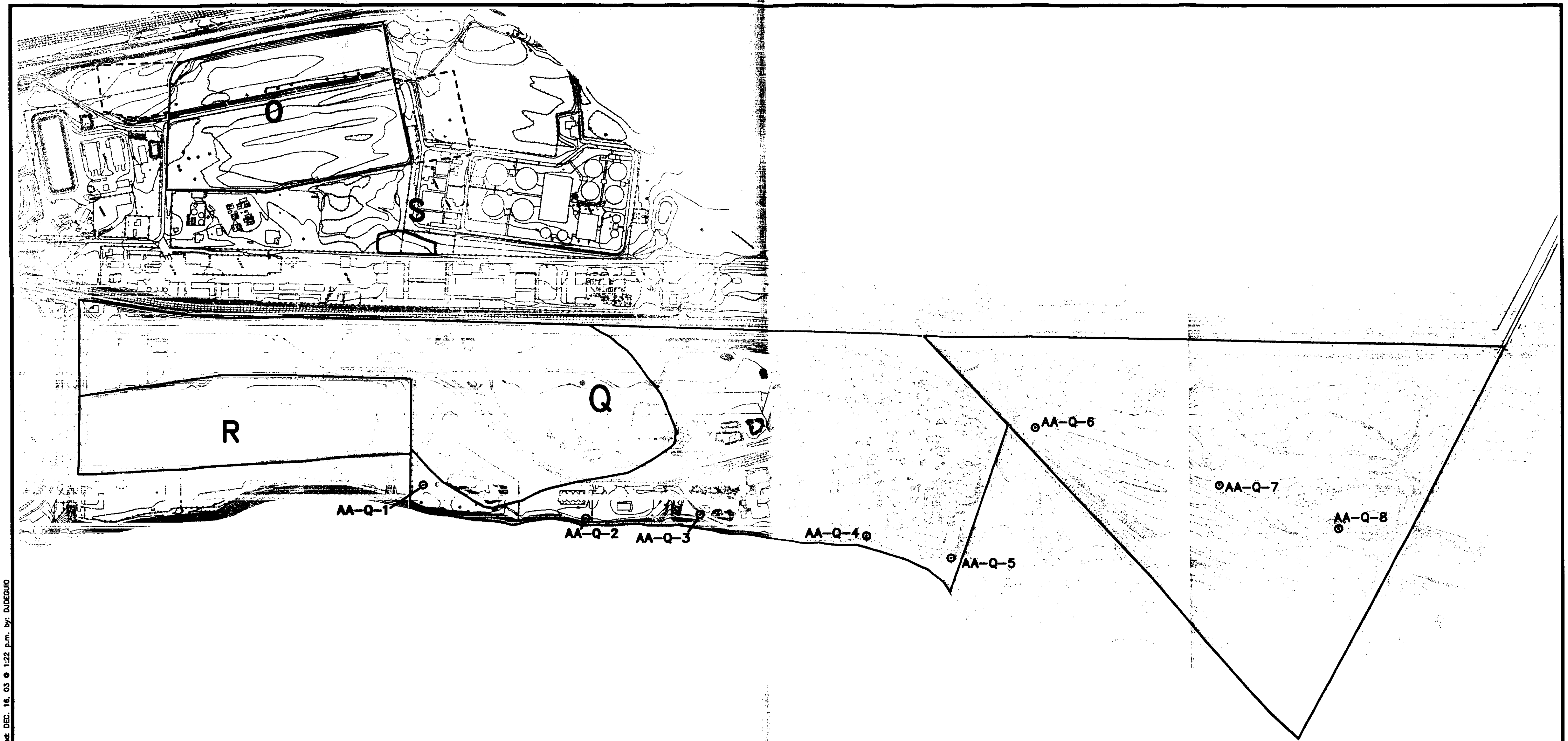


LEGEND

⊙ Site-Related Groundwater Sampling Locations

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site P Alluvial Aquifer Sample Locations
FIG. NO. 3-7b	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-7A 3-7D.DWG Last edited: DEC. 16, 03 @ 1:21 p.m. by: DJDEGUIO



LEGEND

⊙ Site-Related Groundwater Sampling Locations

N E S W

0 600

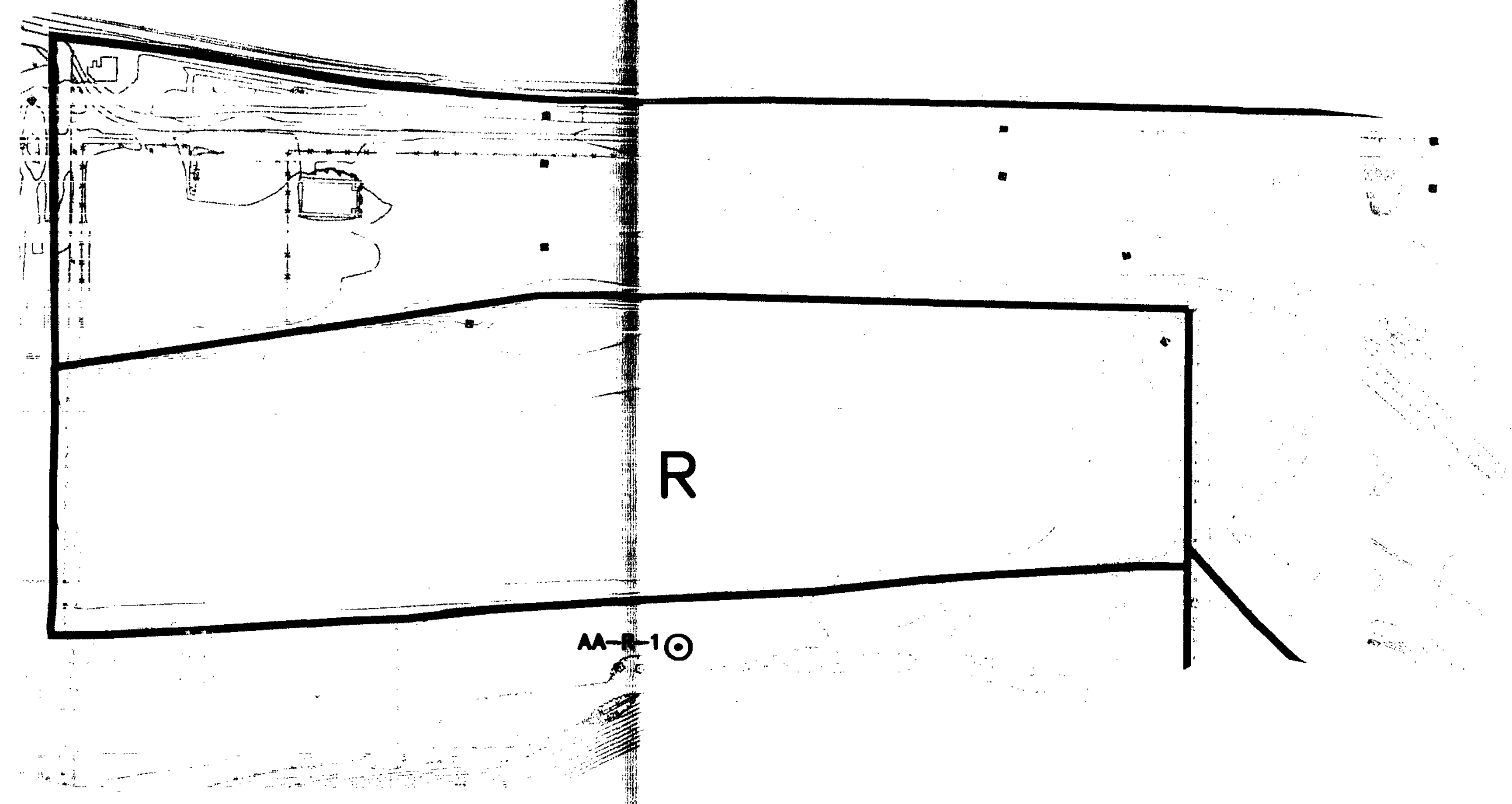
SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

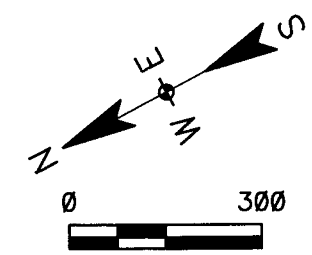
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site Q Alluvial Aquifer Sample Locations	FIG. NO. 3-7c

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-7C.DWG Last edited: DEC. 16, 03 @ 1:22 p.m. by: DJDEGUIO



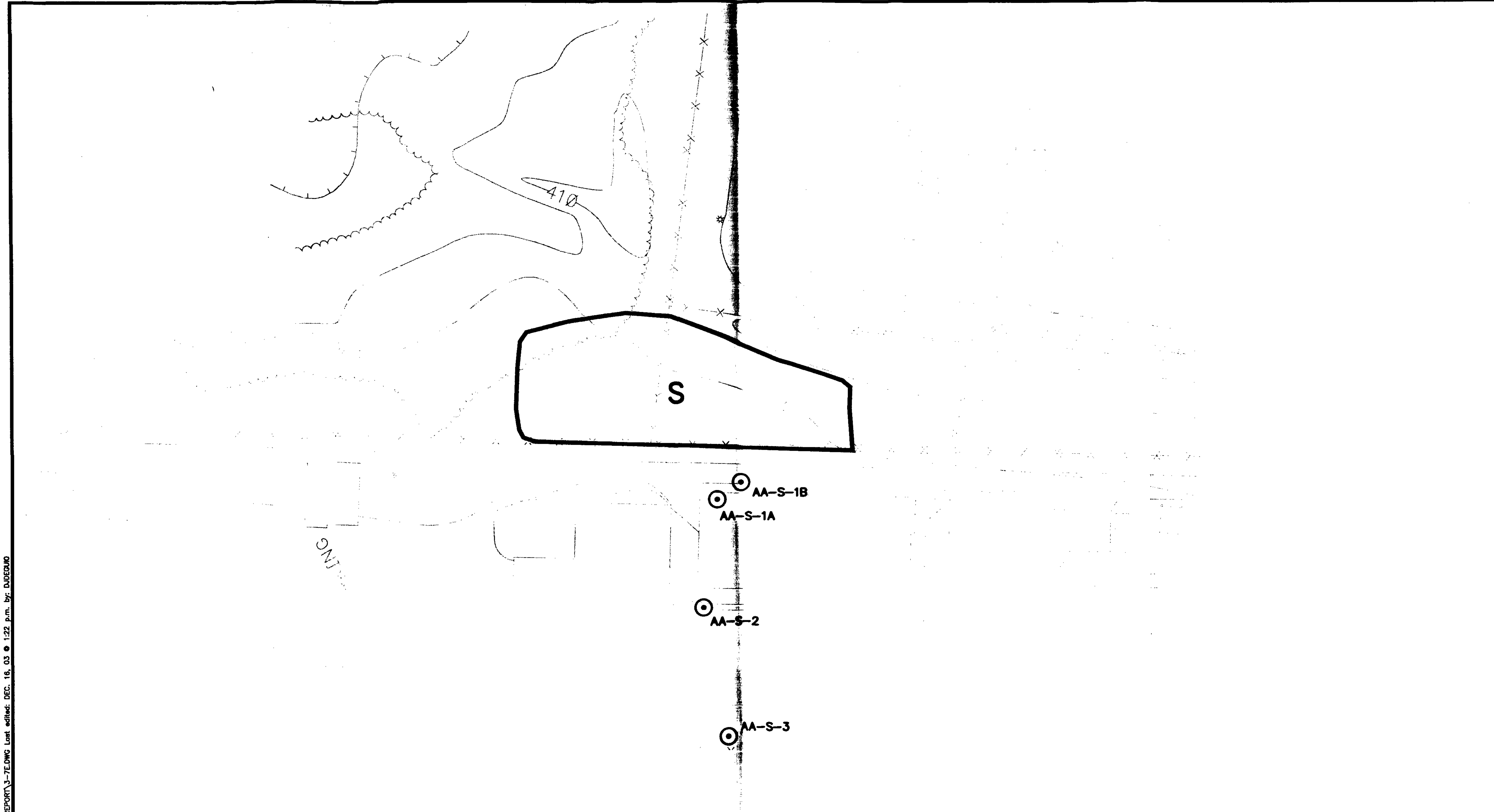
LEGEND

⊙ Site–Related Groundwater Sampling Locations



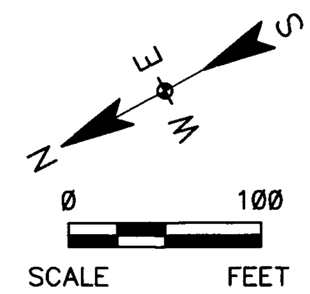
SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd 4/2/Ø3 DSGN. BY: kh CHKD. BY:	Site R Alluvial Aquifer Sample Locations	FIG. NO. 3–7d

File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-7A 3-7D.DWG Last edited: DEC. 16, 03 @ 1:21 p.m. by: DUDEGUIO



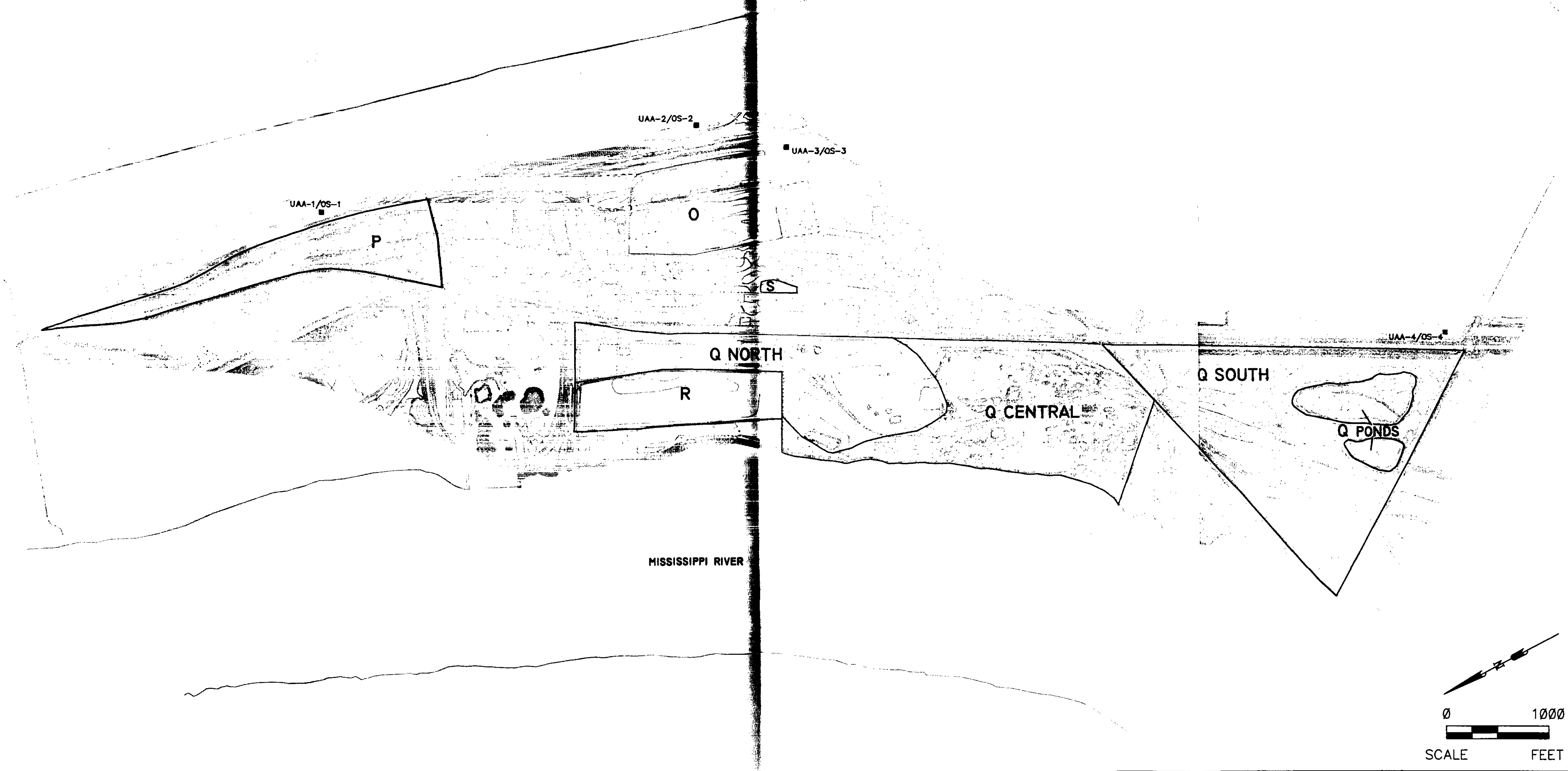
LEGEND

⊙ Site-Related Groundwater Sampling Locations



SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: djd 4/2/03 DSGN. BY: kh CHKD. BY:	Site S Alluvial Aquifer Sample Locations	FIG. NO. 3-7e

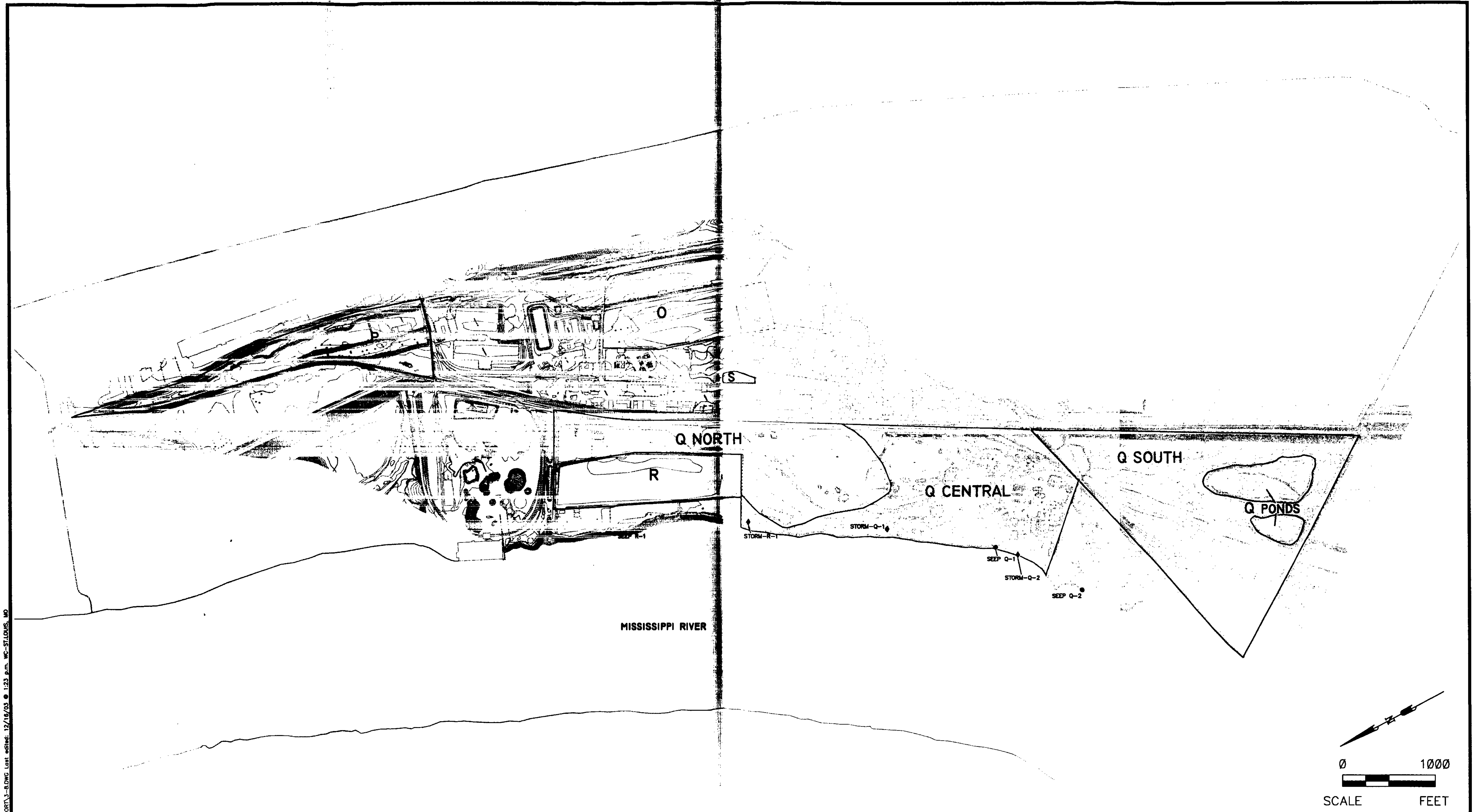
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-7E.DWG Last edited: DEC. 16, 03 @ 1:22 p.m. by: DJDEGUIO



LEGEND

■ Offsite Soil and Upgradient/Groundwater Sampling Locations

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Upgradient Alluvial Aquifer Sample Locations	FIG. NO. 3-7f



LEGEND

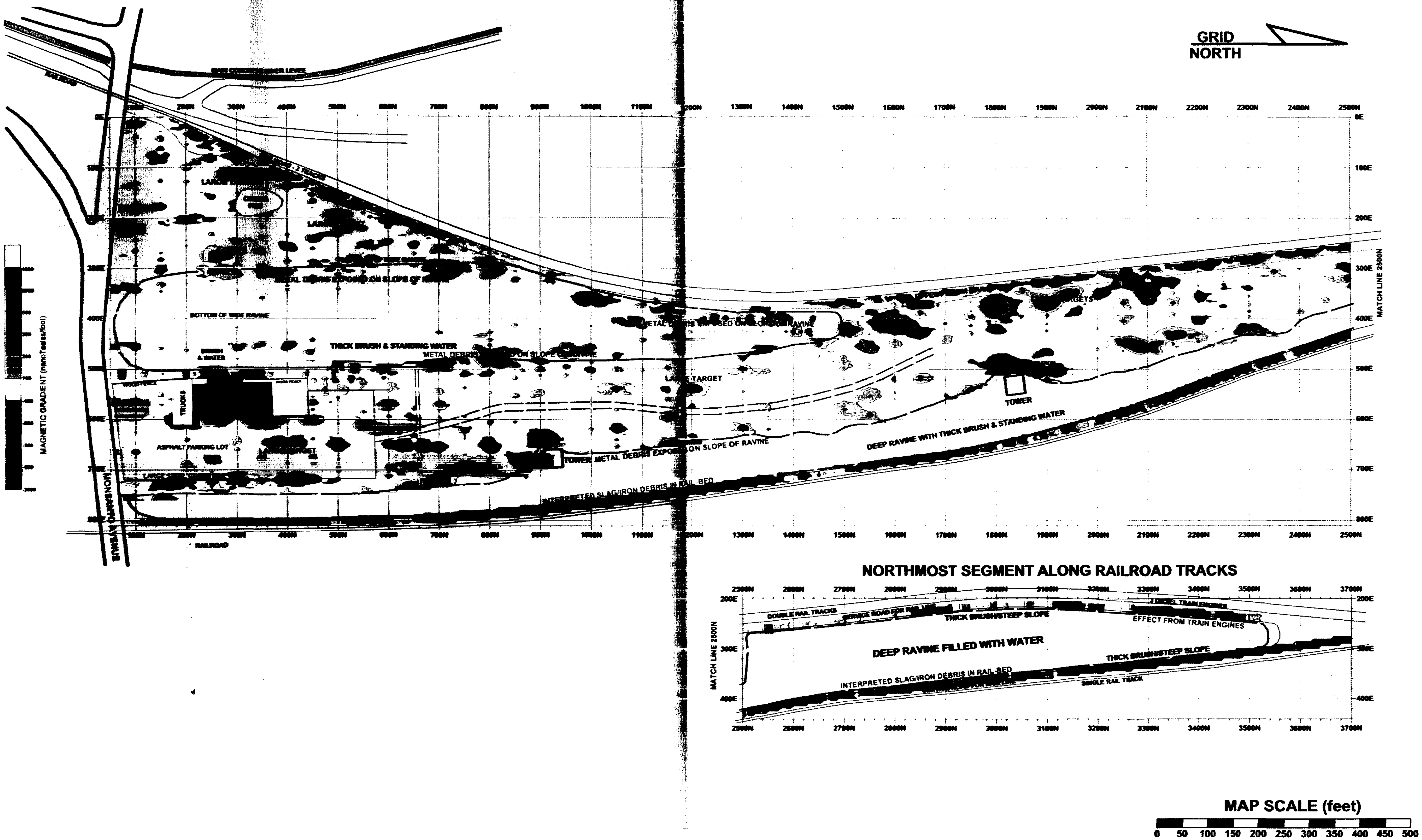
- ♦ Stormwater Sample Location
- ● Seep Sample Location

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

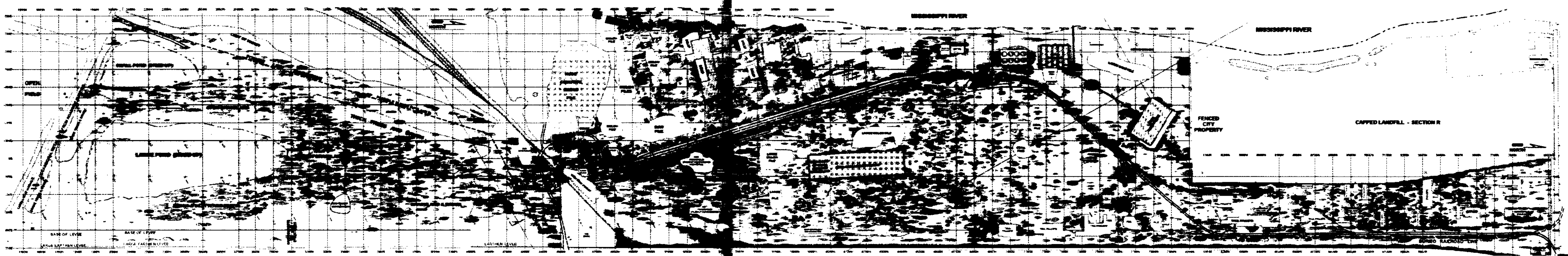
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Stormwater Run-off and Seep Sample Locations	FIG. NO. 3-8

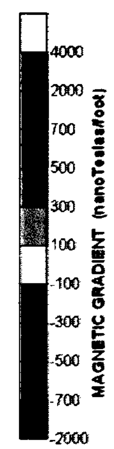
File: E:\21560888.04001\REPORTS\RI_FS REPORT\3-8.DWG Last edited: 12/18/03 @ 1:23 p.m. WC-ST.LOUIS, MO



SOURCE:
MAP TAKEN FROM GEOSPHERE, INC. (2002)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Site P Magnetometer Survey	FIG. NO. 5–1a





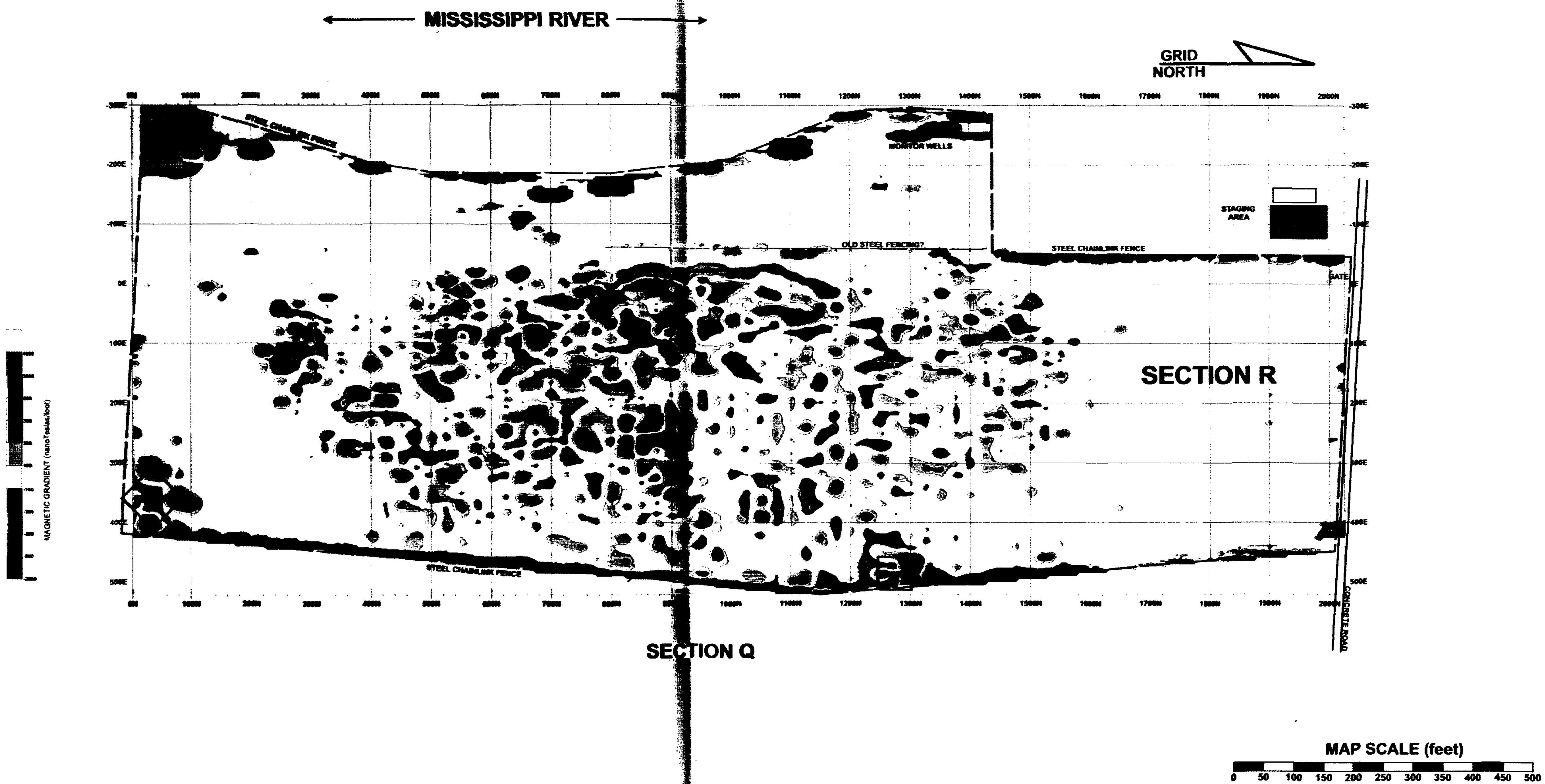
TRUE NORTH

Ø 600
SCALE FEET

SOURCE:
MAP TAKEN FROM GEOSPHERE, INC. (2ØØ2)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 2156Ø888.07ØØ1
URS		
DRN. BY:djd 1Ø/7/Ø3 DSGN. BY:bh CHKD. BY:	Site Q Complete Magnetometer Survey	FIG. NO. 5–1b

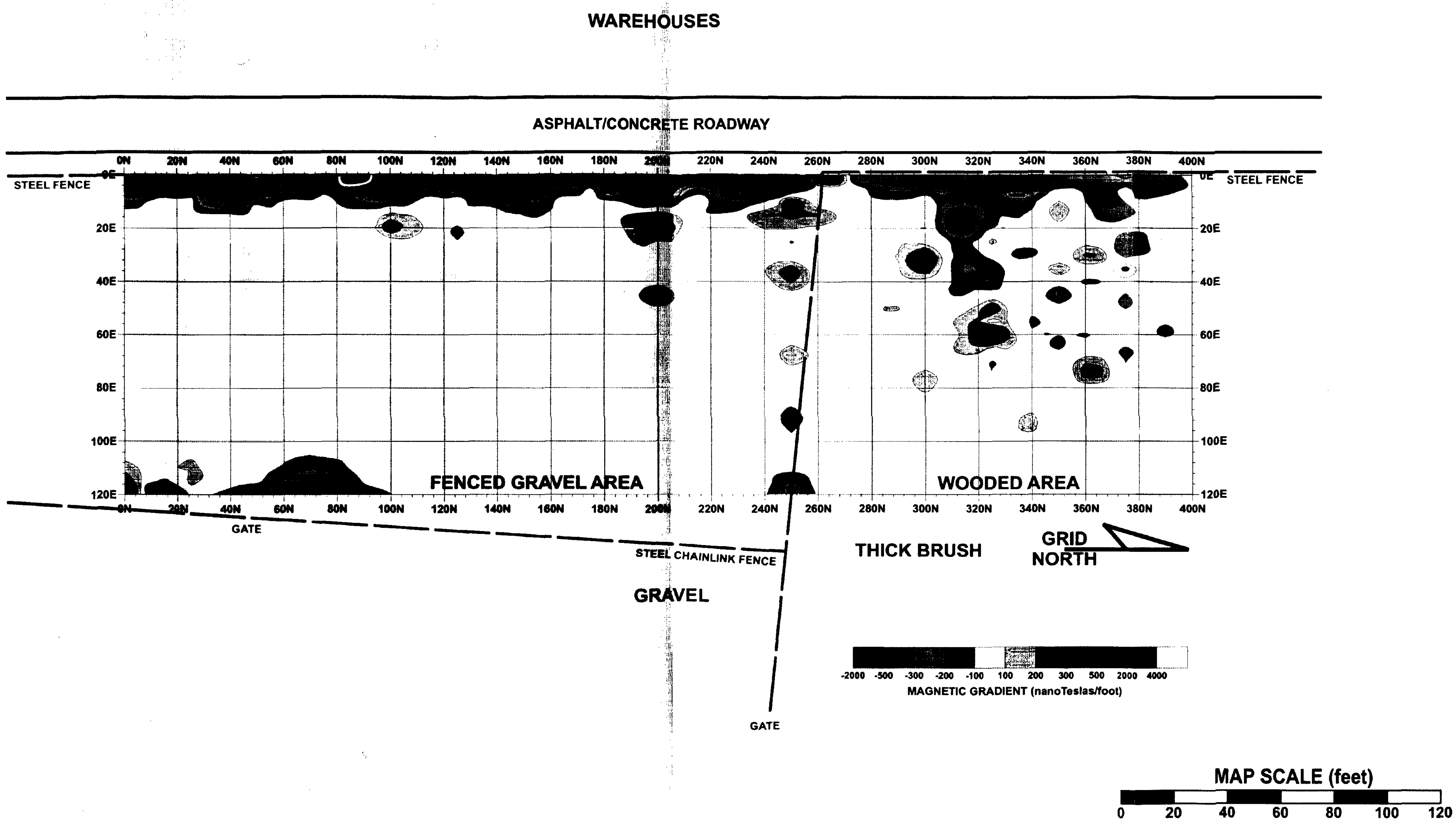
File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-1B.DWG Last edited: 12/16/03 @ 4:54 p.m. WC-ST.LOUIS, MO



SOURCE:
MAP TAKEN FROM GEOSPHERE, INC. (2002)

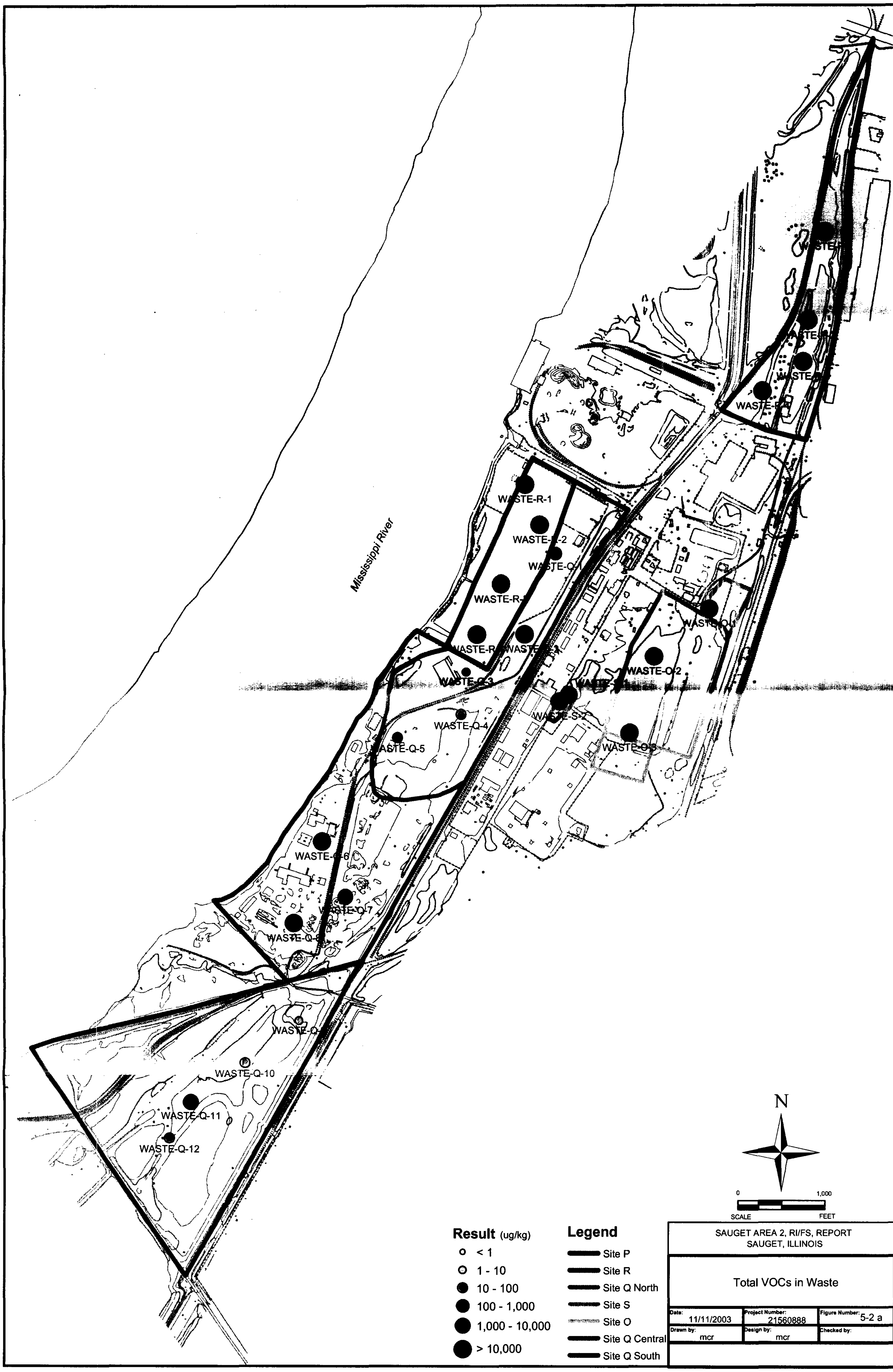
SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Site R Magnetometer Survey — FIG. NO. 5-1c

File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-1C.DWG Last edited: 12/16/03 @ 4:56 p.m. WC-ST.LOUIS, MO

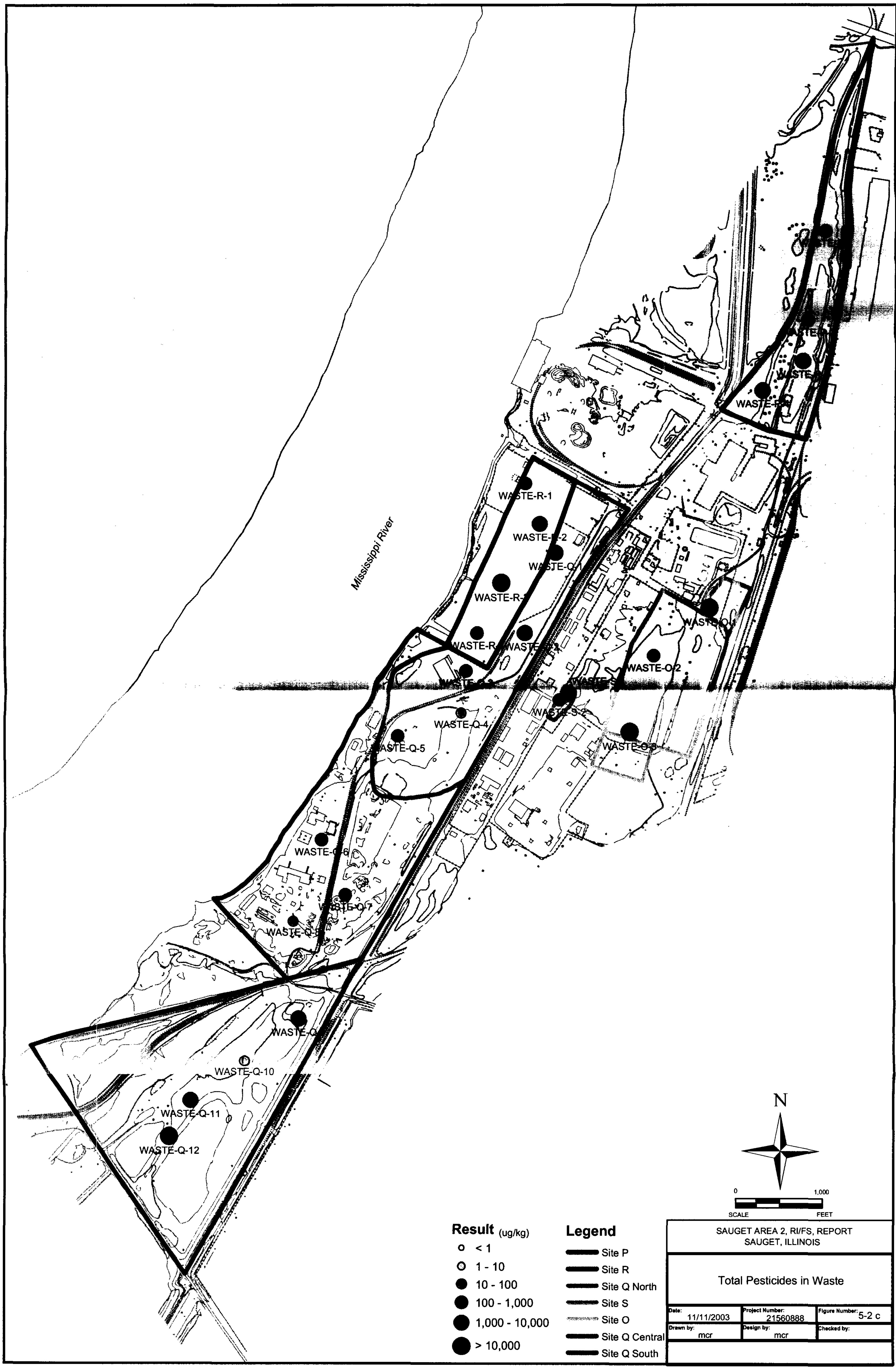


SOURCE:
MAP TAKEN FROM GEOSPHERE, INC. (2002)

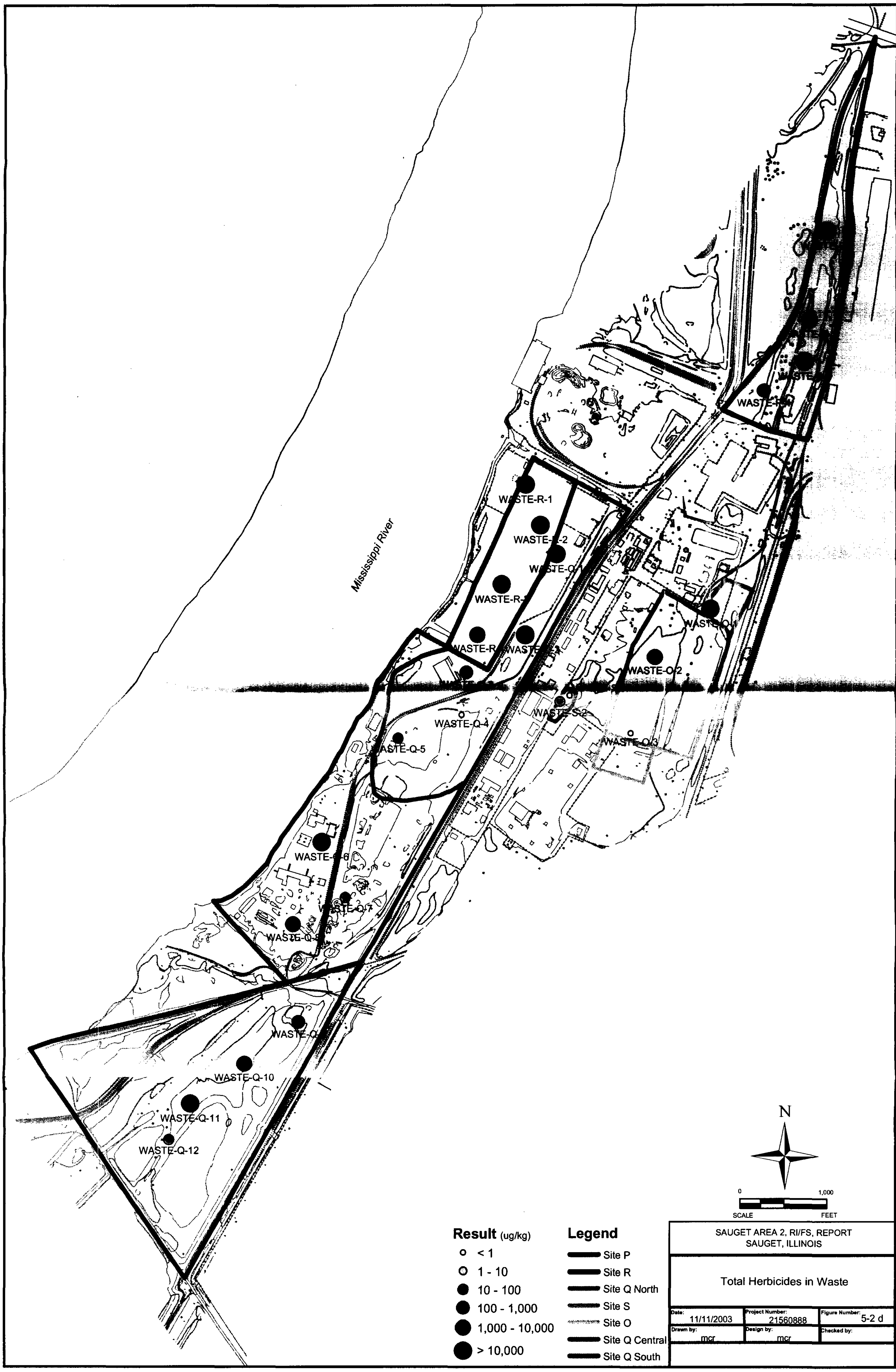
SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Site S Magnetometer Survey
FIG. NO. 5-1d	


Mississippi River
WASTE-R-1
WASTE-Q-1
WASTE-Q-2
WASTE-Q-3
WASTE-Q-4
WASTE-Q-5
WASTE-Q-7
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 a
Drawn by: mcr
Design by: mcr
Checked by:

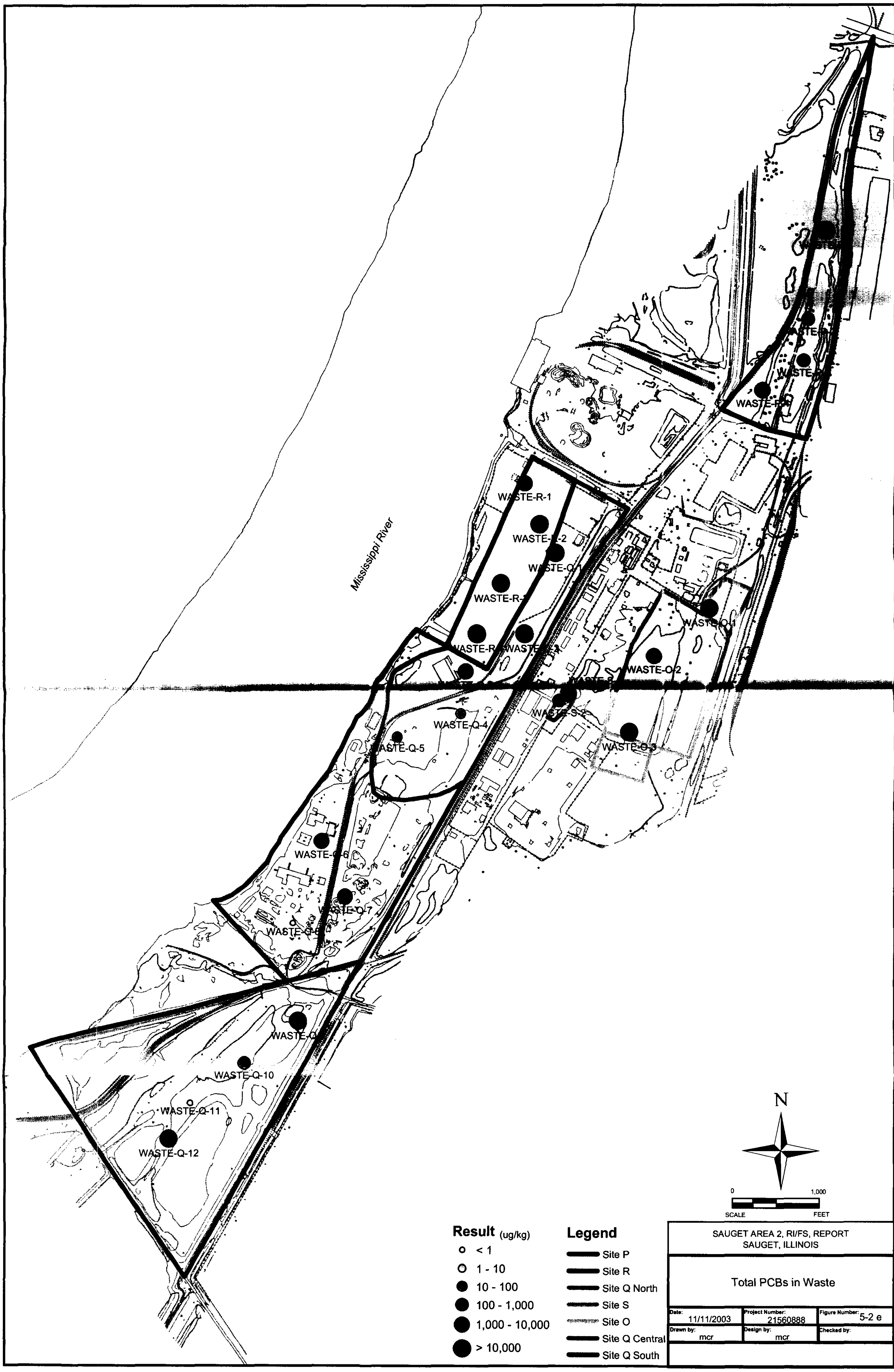
Mississippi River
WASTE-R-1
WASTE-Q-1
WASTE-R-3
WASTE-Q-4
WASTE-Q-5
WASTE-Q-7
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
WASTE-O-2
WASTE-O-3
WASTE-S-1
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 b
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
WASTE-R-1
WASTE-Q-2
WASTE-Q-4
WASTE-Q-5
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 c
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
WASTE-R-1
WASTE-O-2
WASTE-Q-4
WASTE-S-2
WASTE-Q-5
WASTE-O-3
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 d
Drawn by: mcr
Design by: mcr
Checked by:

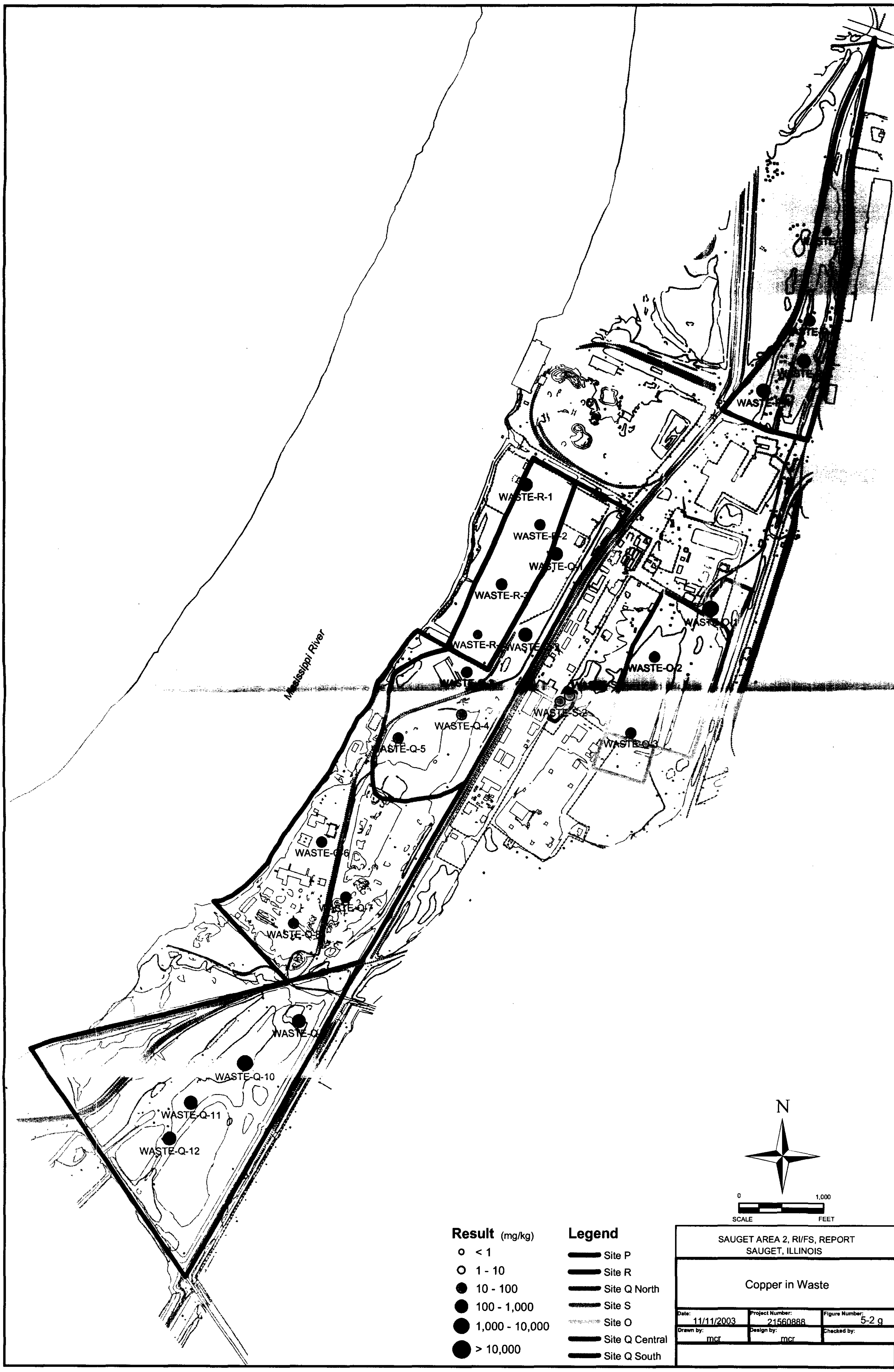


Mississippi River
WASTE-R-1
WASTE-Q-4
WASTE-Q-5
WASTE-O-2
WASTE-O-3
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 e
Drawn by: mcr
Design by: mcr
Checked by:

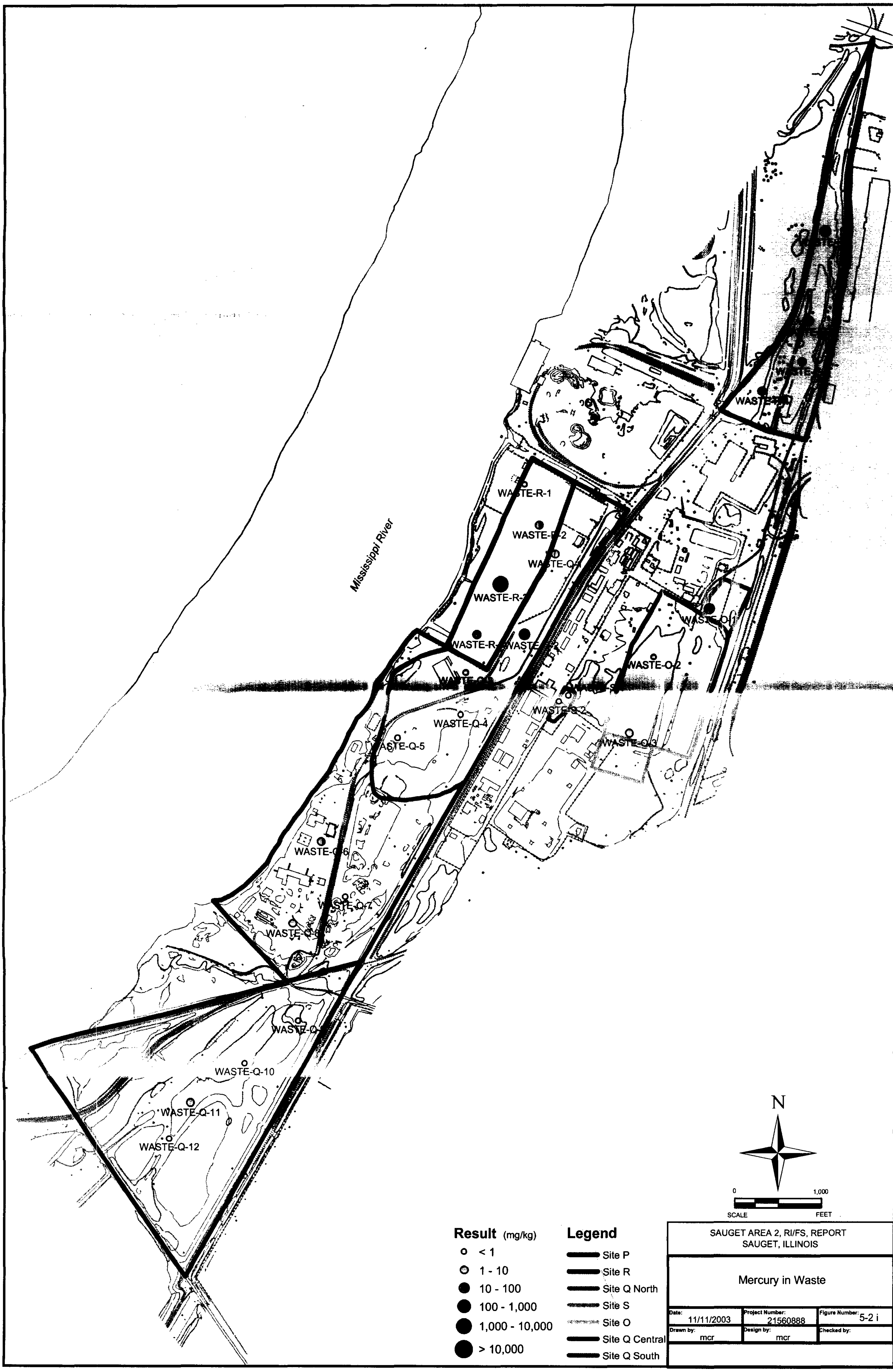
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Waste

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-2 f
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
WASTE-R-1
WASTE-R-2
WASTE-R-3
WASTE-Q-2
WASTE-Q-4
WASTE-Q-5
WASTE-S-2
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 g
Drawn by: mcr
Design by: mcr
Checked by:

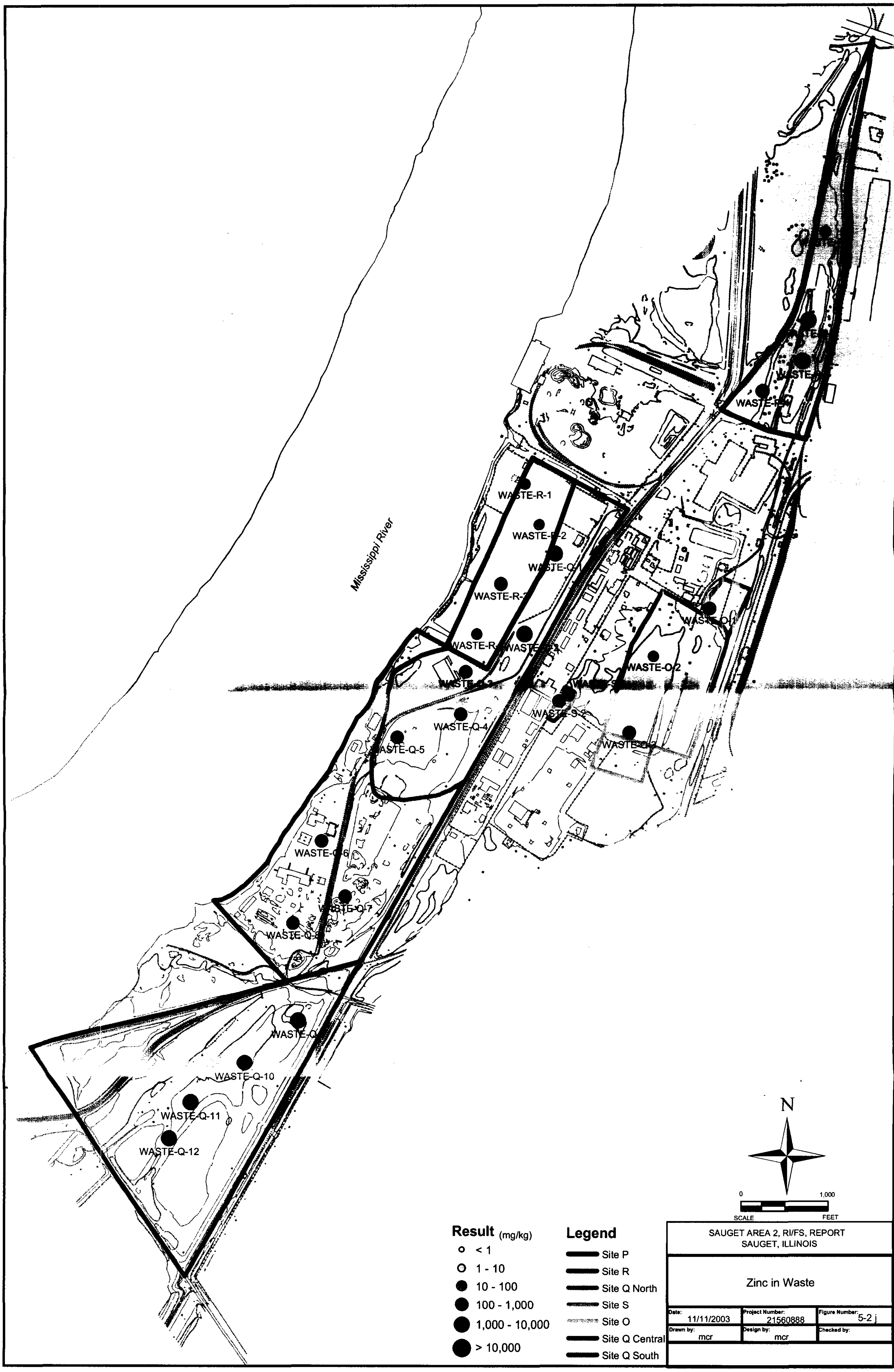
SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Lead in Waste		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-2 h
Drawn by: mcr	Design by: mcr	Checked by:



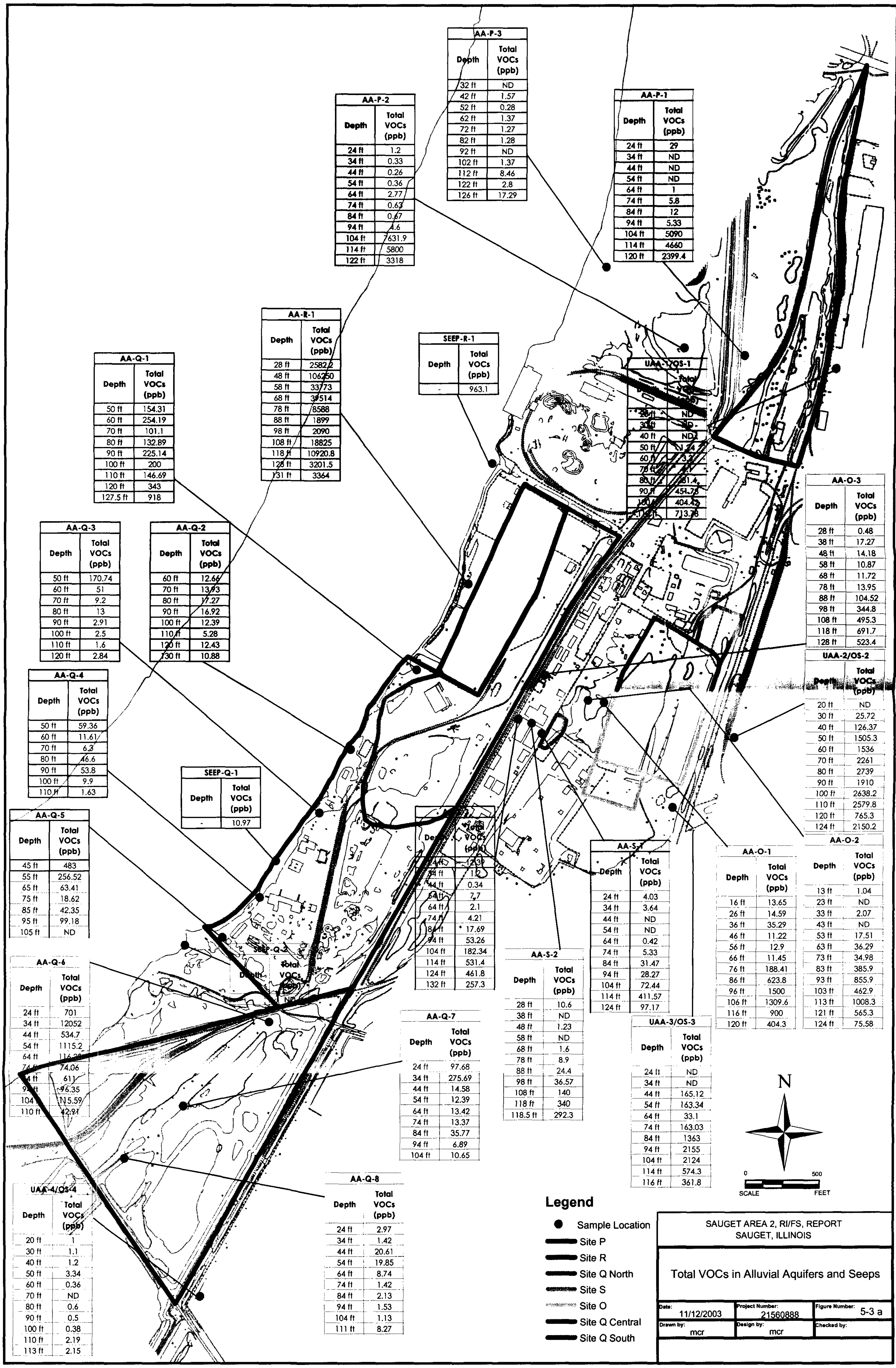
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Mercury in Waste

Date:	Project Number:	Figure Number:
11/11/2003	21560888	5-2 i
Drawn by: mcr	Design by: mcr	Checked by:



Mississippi River
WASTE-R-1
WASTE-Q-2
WASTE-Q-4
WASTE-Q-5
WASTE-Q-10
WASTE-Q-11
WASTE-Q-12
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Waste
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-2 j
Drawn by: mcr
Design by: mcr
Checked by:



AA-P-3

Depth	Total VOCs (ppb)
32 ft	ND
42 ft	1.57
52 ft	0.28
62 ft	1.37
72 ft	1.27
82 ft	1.28
92 ft	ND
102 ft	1.37
112 ft	8.46
122 ft	2.8
126 ft	17.29

AA-P-2

Depth	Total VOCs (ppb)
24 ft	1.2
34 ft	0.33
44 ft	0.26
54 ft	0.36
64 ft	2.77
74 ft	0.63
84 ft	0.67
94 ft	4.6
104 ft	7631.9
114 ft	5800
122 ft	3318

AA-P-1

Depth	Total VOCs (ppb)
24 ft	29
34 ft	ND
44 ft	ND
54 ft	ND
64 ft	1
74 ft	5.8
84 ft	12
94 ft	5.33
104 ft	5090
114 ft	4660
120 ft	2399.4

AA-R-1

Depth	Total VOCs (ppb)
28 ft	2582.2
48 ft	106250
58 ft	33773
68 ft	39514
78 ft	8588
88 ft	1899
98 ft	2090
108 ft	18825
118 ft	10920.8
128 ft	3201.5
131 ft	3364

SEEP-R-1

Depth	Total VOCs (ppb)
-	963.1

AA-Q-1

Depth	Total VOCs (ppb)
50 ft	154.31
60 ft	254.19
70 ft	101.1
80 ft	132.89
90 ft	225.14
100 ft	200
110 ft	146.69
120 ft	343
127.5 ft	918

UAA-1/OS-1

Depth	Total VOCs (ppb)
20 ft	ND
30 ft	ND
40 ft	ND
50 ft	1.24
60 ft	3.2
70 ft	[illegible]
80 ft	281.4
90 ft	451.75
100 ft	404.42
110 ft	713.78

AA-O-3

Depth	Total VOCs (ppb)
28 ft	0.48
38 ft	17.27
48 ft	14.18
58 ft	10.87
68 ft	11.72
78 ft	13.95
88 ft	104.52
98 ft	344.8
108 ft	495.3
118 ft	691.7
128 ft	523.4

AA-Q-3

Depth	Total VOCs (ppb)
50 ft	170.74
60 ft	51
70 ft	9.2
80 ft	13
90 ft	2.91
100 ft	2.5
110 ft	1.6
120 ft	2.84

AA-Q-2

Depth	Total VOCs (ppb)
60 ft	12.66
70 ft	13.93
80 ft	17.27
90 ft	16.92
100 ft	12.39
110 ft	5.28
120 ft	12.43
130 ft	10.88

UAA-2/OS-2

Depth	Total VOCs (ppb)
20 ft	ND
30 ft	25.72
40 ft	126.37
50 ft	1505.3
60 ft	1536
70 ft	2261
80 ft	2739
90 ft	1910
100 ft	2638.2
110 ft	2579.8
120 ft	765.3
124 ft	2150.2

AA-Q-4

Depth	Total VOCs (ppb)
50 ft	59.36
60 ft	11.61
70 ft	6.3
80 ft	46.6
90 ft	53.8
100 ft	9.9
110 ft	1.63

SEEP-Q-1

Depth	Total VOCs (ppb)
-	10.97

AA-Q-5

Depth	Total VOCs (ppb)
45 ft	483
55 ft	256.52
65 ft	63.41
75 ft	18.62
85 ft	42.35
95 ft	99.18
105 ft	ND

[illegible]

Depth	Total VOCs (ppb)
24 ft	12.39
34 ft	1.2
44 ft	0.34
54 ft	7.7
64 ft	2.1
74 ft	4.21
84 ft	17.69
94 ft	53.26
104 ft	182.34
114 ft	531.4
124 ft	461.8
132 ft	257.3

AA-S-1

Depth	Total VOCs (ppb)
24 ft	4.03
34 ft	3.64
44 ft	ND
54 ft	ND
64 ft	0.42
74 ft	5.33
84 ft	31.47
94 ft	28.27
104 ft	72.44
114 ft	411.57
124 ft	97.17

AA-O-1

Depth	Total VOCs (ppb)
16 ft	13.65
26 ft	14.59
36 ft	35.29
46 ft	11.22
56 ft	12.9
66 ft	11.45
76 ft	188.41
86 ft	623.8
96 ft	1500
106 ft	1309.6
116 ft	900
120 ft	404.3

AA-O-2

Depth	Total VOCs (ppb)
13 ft	1.04
23 ft	ND
33 ft	2.07
43 ft	ND
53 ft	17.51
63 ft	36.29
73 ft	34.98
83 ft	385.9
93 ft	855.9
103 ft	462.9
113 ft	1008.3
121 ft	565.3
124 ft	75.58

SEEP-Q-2

Depth	Total VOCs (ppb)
[illegible]	ND

AA-Q-6

Depth	Total VOCs (ppb)
24 ft	701
34 ft	12052
44 ft	534.7
54 ft	1115.2
64 ft	116.29
74 ft	74.06
84 ft	611
94 ft	96.35
104 ft	N5.59
110 ft	42.91

AA-S-2

Depth	Total VOCs (ppb)
28 ft	10.6
38 ft	ND
48 ft	1.23
58 ft	ND
68 ft	1.6
78 ft	8.9
88 ft	24.4
98 ft	36.57
108 ft	140
118 ft	340
118.5 ft	292.3

AA-Q-7

Depth	Total VOCs (ppb)
24 ft	97.68
34 ft	275.69
44 ft	14.58
54 ft	12.39
64 ft	13.42
74 ft	13.37
84 ft	35.77
94 ft	6.89
104 ft	10.65

UAA-3/OS-3

Depth	Total VOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	165.12
54 ft	163.34
64 ft	33.1
74 ft	163.03
84 ft	1363
94 ft	2155
104 ft	2124
114 ft	574.3
116 ft	361.8

UAA-4/OS-4

Depth	Total VOCs (ppb)
20 ft	1
30 ft	1.1
40 ft	1.2
50 ft	3.34
60 ft	0.36
70 ft	ND
80 ft	0.6
90 ft	0.5
100 ft	0.38
110 ft	2.19
113 ft	2.15

AA-Q-8

Depth	Total VOCs (ppb)
24 ft	2.97
34 ft	1.42
44 ft	20.61
54 ft	19.85
64 ft	8.74
74 ft	1.42
84 ft	2.13
94 ft	1.53
104 ft	1.13
111 ft	8.27

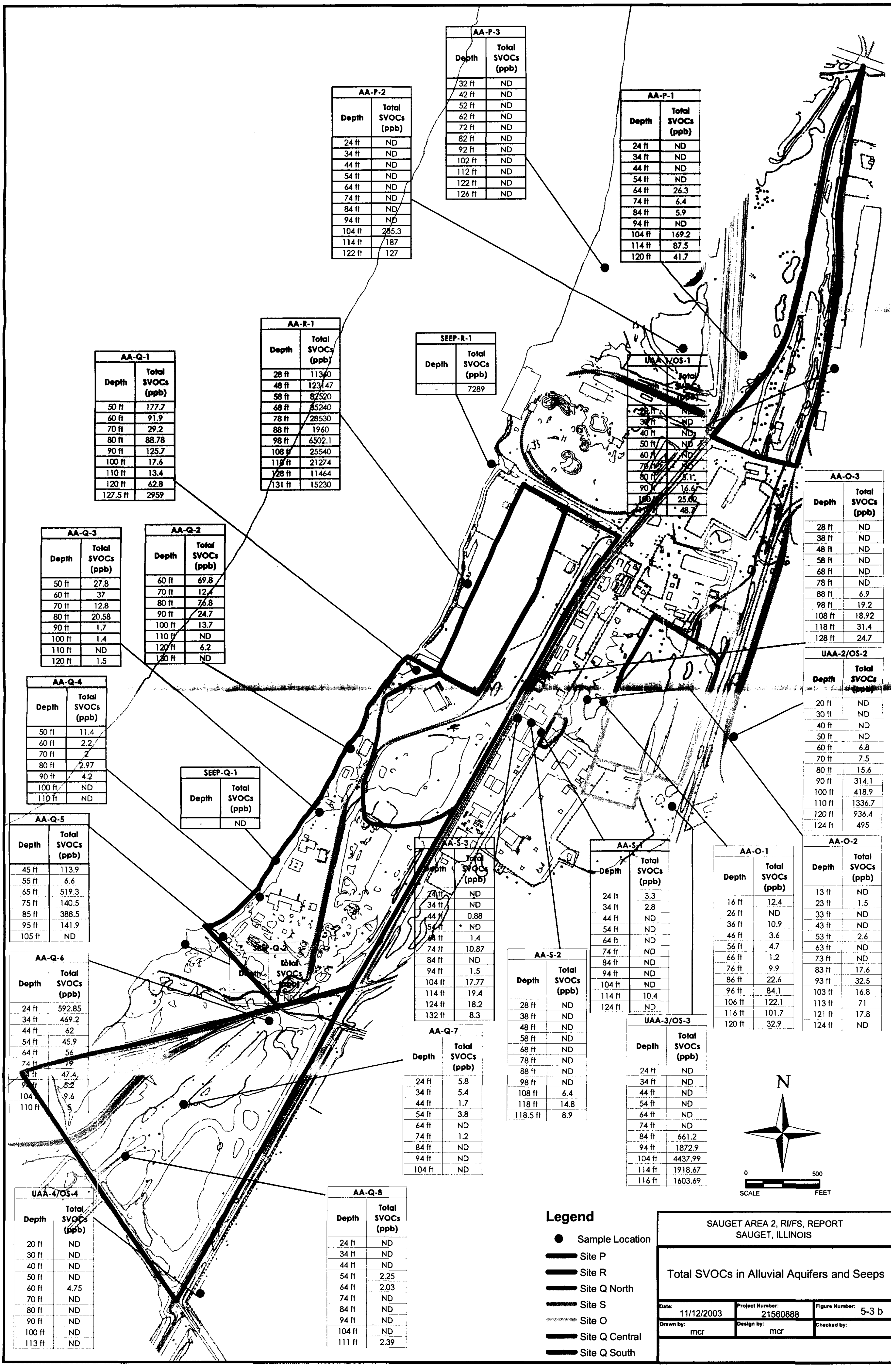
Legend

- ● Sample Location
- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total VOCs in Alluvial Aquifers and Seeps

Date: 11/12/2003	Project Number: 21560888	Figure Number: 5-3 a
Drawn by: mcr	Design by: mcr	Checked by:



AA-P-3	
Depth	Total SVOCs (ppb)
32 ft	ND
42 ft	ND
52 ft	ND
62 ft	ND
72 ft	ND
82 ft	ND
92 ft	ND
102 ft	ND
112 ft	ND
122 ft	ND
126 ft	ND

AA-P-2	
Depth	Total SVOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	ND
54 ft	ND
64 ft	ND
74 ft	ND
84 ft	ND
94 ft	ND
104 ft	285.3
114 ft	187
122 ft	127

AA-P-1	
Depth	Total SVOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	ND
54 ft	ND
64 ft	26.3
74 ft	6.4
84 ft	5.9
94 ft	ND
104 ft	169.2
114 ft	87.5
120 ft	41.7

AA-R-1	
Depth	Total SVOCs (ppb)
28 ft	11360
48 ft	123147
58 ft	82520
68 ft	85240
78 ft	28530
88 ft	1960
98 ft	6502.1
108 ft	25540
118 ft	21274
128 ft	11464
131 ft	15230

SEEP-R-1	
Depth	Total SVOCs (ppb)
-	7289

AA-Q-1	
Depth	Total SVOCs (ppb)
50 ft	177.7
60 ft	91.9
70 ft	29.2
80 ft	88.78
90 ft	125.7
100 ft	17.6
110 ft	13.4
120 ft	62.8
127.5 ft	2959

UAA-1/OS-1	
Depth	Total SVOCs (ppb)
20 ft	ND
30 ft	ND
40 ft	ND
50 ft	ND
60 ft	ND
70 ft	ND
80 ft	5.1
90 ft	16.6
100 ft	25.62
[illegible]	48.7

AA-O-3	
Depth	Total SVOCs (ppb)
28 ft	ND
38 ft	ND
48 ft	ND
58 ft	ND
68 ft	ND
78 ft	ND
88 ft	6.9
98 ft	19.2
108 ft	18.92
118 ft	31.4
128 ft	24.7

AA-Q-3	
Depth	Total SVOCs (ppb)
50 ft	27.8
60 ft	37
70 ft	12.8
80 ft	20.58
90 ft	1.7
100 ft	1.4
110 ft	ND
120 ft	1.5

AA-Q-2	
Depth	Total SVOCs (ppb)
60 ft	69.8
70 ft	12.4
80 ft	76.8
90 ft	24.7
100 ft	13.7
110 ft	ND
120 ft	6.2
130 ft	ND

UAA-2/OS-2	
Depth	Total SVOCs (ppb)
20 ft	ND
30 ft	ND
40 ft	ND
50 ft	ND
60 ft	6.8
70 ft	7.5
80 ft	15.6
90 ft	314.1
100 ft	418.9
110 ft	1336.7
120 ft	936.4
124 ft	495

AA-Q-4	
Depth	Total SVOCs (ppb)
50 ft	11.4
60 ft	2.2
70 ft	2
80 ft	2.97
90 ft	4.2
100 ft	ND
110 ft	ND

SEEP-Q-1	
Depth	Total SVOCs (ppb)
-	ND

AA-Q-5	
Depth	Total SVOCs (ppb)
45 ft	113.9
55 ft	6.6
65 ft	519.3
75 ft	140.5
85 ft	388.5
95 ft	141.9
105 ft	ND

AA-S-3	
Depth	Total SVOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	0.88
54 ft	ND
64 ft	1.4
74 ft	10.87
84 ft	ND
94 ft	1.5
104 ft	17.77
114 ft	19.4
124 ft	18.2
132 ft	8.3

AA-S-1	
Depth	Total SVOCs (ppb)
24 ft	3.3
34 ft	2.8
44 ft	ND
54 ft	ND
64 ft	ND
74 ft	ND
84 ft	ND
94 ft	ND
104 ft	ND
114 ft	10.4
124 ft	ND

AA-O-1	
Depth	Total SVOCs (ppb)
16 ft	12.4
26 ft	ND
36 ft	10.9
46 ft	3.6
56 ft	4.7
66 ft	1.2
76 ft	9.9
86 ft	22.6
96 ft	84.1
106 ft	122.1
116 ft	101.7
120 ft	32.9

AA-O-2	
Depth	Total SVOCs (ppb)
13 ft	ND
23 ft	1.5
33 ft	ND
43 ft	ND
53 ft	2.6
63 ft	ND
73 ft	ND
83 ft	17.6
93 ft	32.5
103 ft	16.8
113 ft	71
121 ft	17.8
124 ft	ND

SEEP-Q-3	
Depth	Total SVOCs (ppb)
	ND

AA-Q-6	
Depth	Total SVOCs (ppb)
24 ft	592.85
34 ft	469.2
44 ft	62
54 ft	45.9
64 ft	56
74 ft	19
84 ft	47.4
94 ft	5.2
104 ft	9.6
110 ft	5

AA-S-2	
Depth	Total SVOCs (ppb)
28 ft	ND
38 ft	ND
48 ft	ND
58 ft	ND
68 ft	ND
78 ft	ND
88 ft	ND
98 ft	ND
108 ft	6.4
118 ft	14.8
118.5 ft	8.9

AA-Q-7	
Depth	Total SVOCs (ppb)
24 ft	5.8
34 ft	5.4
44 ft	1.7
54 ft	3.8
64 ft	ND
74 ft	1.2
84 ft	ND
94 ft	ND
104 ft	ND

UAA-3/OS-3	
Depth	Total SVOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	ND
54 ft	ND
64 ft	ND
74 ft	ND
84 ft	661.2
94 ft	1872.9
104 ft	4437.99
114 ft	1918.67
116 ft	1603.69

UAA-4/OS-4	
Depth	Total SVOCs (ppb)
20 ft	ND
30 ft	ND
40 ft	ND
50 ft	ND
60 ft	4.75
70 ft	ND
80 ft	ND
90 ft	ND
100 ft	ND
113 ft	ND

AA-Q-8	
Depth	Total SVOCs (ppb)
24 ft	ND
34 ft	ND
44 ft	ND
54 ft	2.25
64 ft	2.03
74 ft	ND
84 ft	ND
94 ft	ND
104 ft	ND
111 ft	2.39

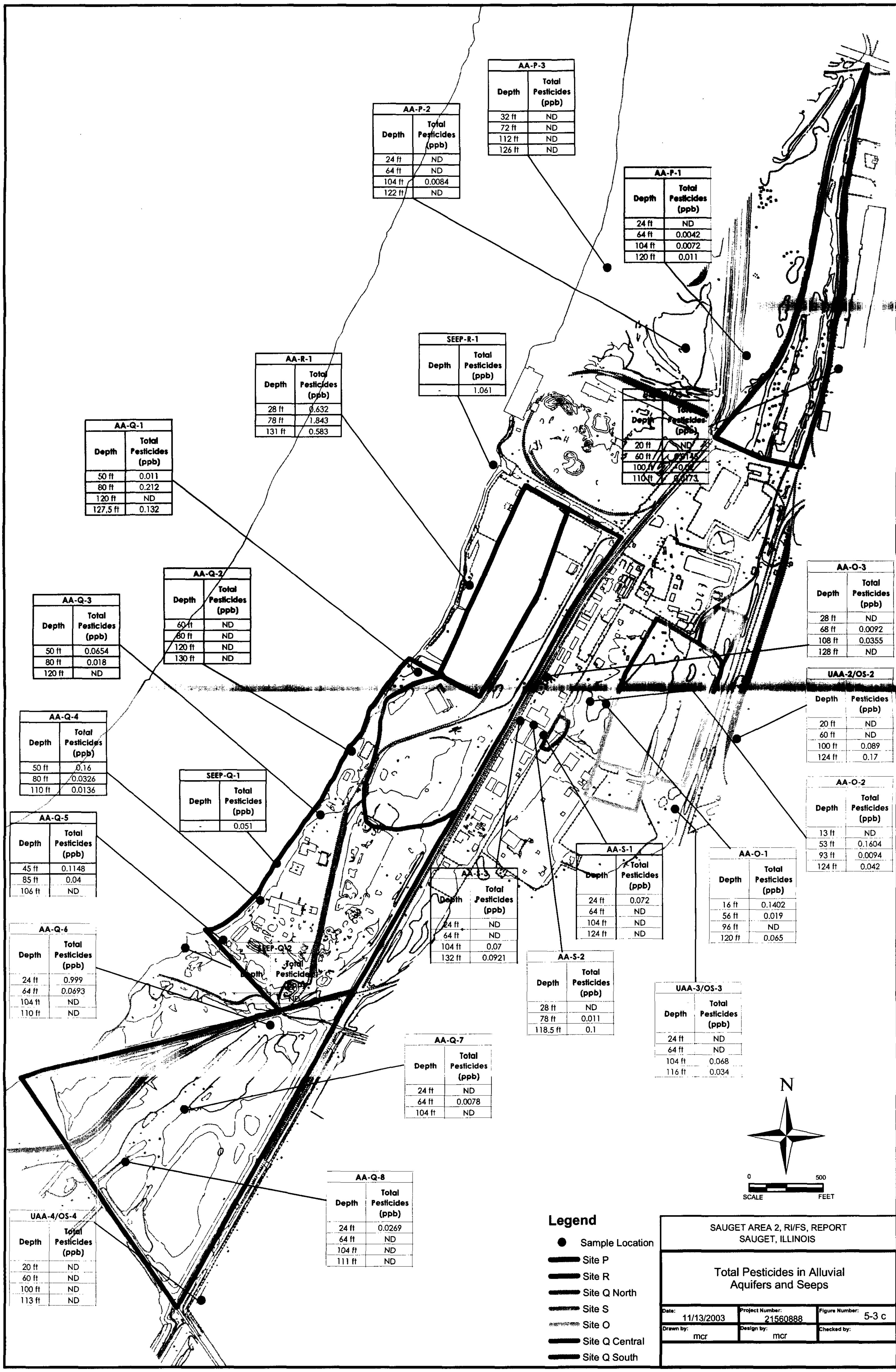
Legend

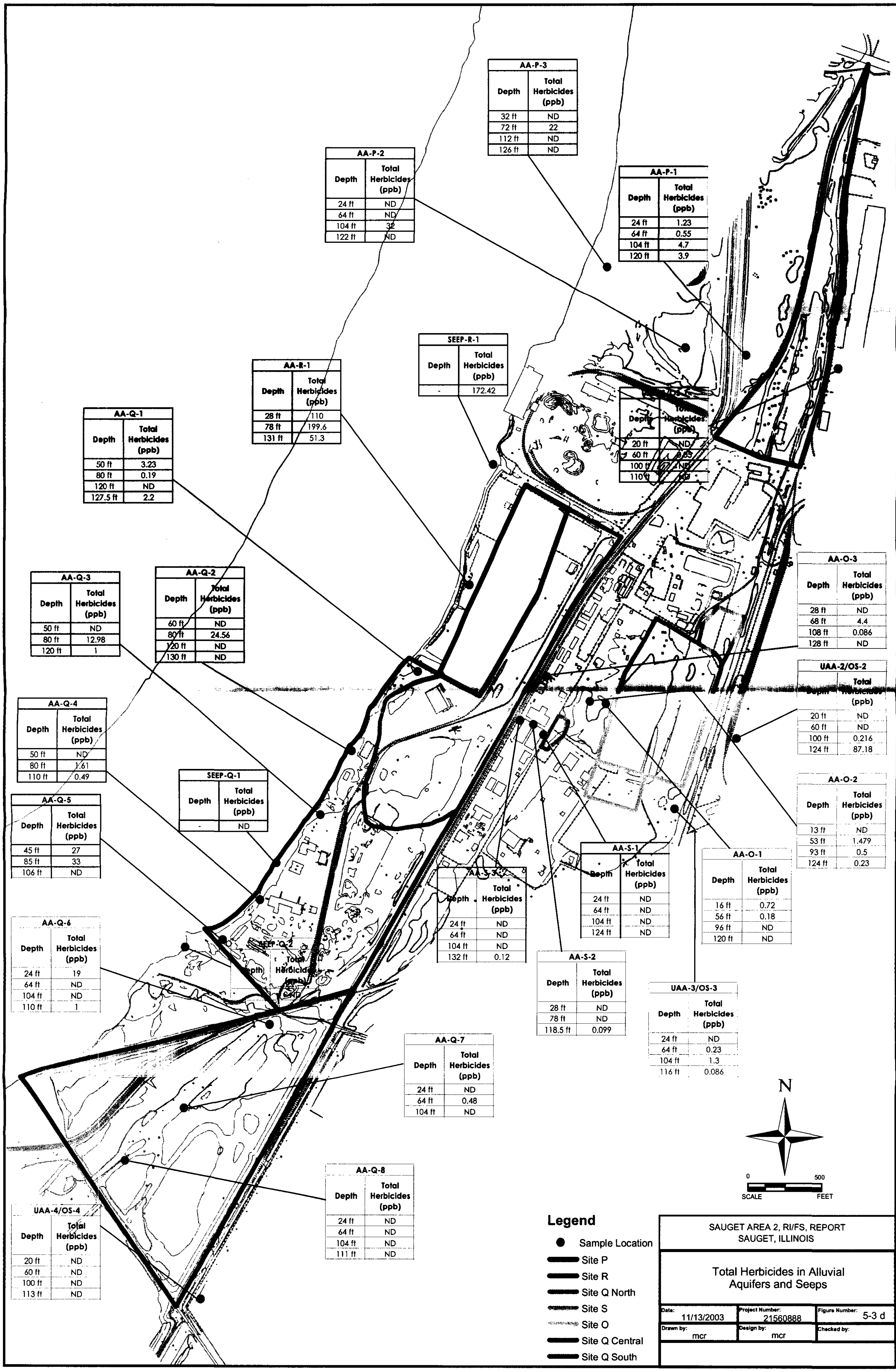
- Sample Location
- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total SVOCs in Alluvial Aquifers and Seeps

Date: 11/12/2003	Project Number: 21560888	Figure Number: 5-3 b
Drawn by: mcr	Design by: mcr	Checked by:


AA-P-3
Depth | Total Pesticides (ppb)
32 ft | ND
72 ft | ND
112 ft | ND
126 ft | ND
AA-P-2
Depth | Total Pesticides (ppb)
24 ft | ND
64 ft | ND
104 ft | 0.0084
122 ft | ND
AA-P-1
Depth | Total Pesticides (ppb)
24 ft | ND
64 ft | 0.0042
104 ft | 0.0072
120 ft | 0.011
SEEP-R-1
Depth | Total Pesticides (ppb)
- | 1.061
AA-R-1
Depth | Total Pesticides (ppb)
28 ft | 0.632
78 ft | 1.843
131 ft | 0.583
Depth | Total Pesticides (ppb)
20 ft | ND
60 ft
100 ft
110 ft
AA-Q-1
Depth | Total Pesticides (ppb)
50 ft | 0.011
80 ft | 0.212
120 ft | ND
127.5 ft | 0.132
AA-Q-2
Depth | Total Pesticides (ppb)
60 ft | ND
80 ft | ND
120 ft | ND
130 ft | ND
AA-Q-3
Depth | Total Pesticides (ppb)
50 ft | 0.0654
80 ft | 0.018
120 ft | ND
AA-O-3
Depth | Total Pesticides (ppb)
28 ft | ND
68 ft | 0.0092
108 ft | 0.0355
128 ft | ND
UAA-2/OS-2
Depth | Pesticides (ppb)
20 ft | ND
60 ft | ND
100 ft | 0.089
124 ft | 0.17
AA-Q-4
Depth | Total Pesticides (ppb)
50 ft | 0.16
80 ft | 0.0326
110 ft | 0.0136
SEEP-Q-1
Depth | Total Pesticides (ppb)
- | 0.051
AA-Q-5
Depth | Total Pesticides (ppb)
45 ft | 0.1148
85 ft | 0.04
106 ft | ND
AA-O-2
Depth | Total Pesticides (ppb)
13 ft | ND
53 ft | 0.1604
93 ft | 0.0094
124 ft | 0.042
AA-S-1
Depth | Total Pesticides (ppb)
24 ft | 0.072
64 ft | ND
104 ft | ND
124 ft | ND
Depth | Total Pesticides (ppb)
24 ft | ND
64 ft | ND
104 ft | 0.07
132 ft | 0.0921
AA-O-1
Depth | Total Pesticides (ppb)
16 ft | 0.1402
56 ft | 0.019
96 ft | ND
120 ft | 0.065
AA-Q-6
Depth | Total Pesticides (ppb)
24 ft | 0.999
64 ft | 0.0693
104 ft | ND
110 ft | ND
SEEP-Q-2
AA-S-2
Depth | Total Pesticides (ppb)
28 ft | ND
78 ft | 0.011
118.5 ft | 0.1
UAA-3/OS-3
Depth | Total Pesticides (ppb)
24 ft | ND
64 ft | ND
104 ft | 0.068
116 ft | 0.034
AA-Q-7
Depth | Total Pesticides (ppb)
24 ft | ND
64 ft | 0.0078
104 ft | ND
N
0
500
SCALE
FEET
AA-Q-8
Depth | Total Pesticides (ppb)
24 ft | 0.0269
64 ft | ND
104 ft | ND
111 ft | ND
UAA-4/OS-4
Depth | Total Pesticides (ppb)
20 ft | ND
60 ft | ND
100 ft | ND
113 ft | ND
Legend
Sample Location
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Alluvial Aquifers and Seeps
Date: 11/13/2003
Project Number: 21560888
Figure Number: 5-3 c
Drawn by: mcr
Design by: mcr
Checked by:



AA-P-3	
Depth	Total Herbicides (ppb)
32 ft	ND
72 ft	22
112 ft	ND
126 ft	ND

AA-P-2	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	ND
104 ft	32
122 ft	ND

AA-P-1	
Depth	Total Herbicides (ppb)
24 ft	1.23
64 ft	0.55
104 ft	4.7
120 ft	3.9

SEEP-R-1	
Depth	Total Herbicides (ppb)
-	172.42

AA-R-1	
Depth	Total Herbicides (ppb)
28 ft	110
78 ft	199.6
131 ft	51.3

[illegible]/OS-[illegible]	
Depth	Total Herbicides (ppb)
20 ft	ND
60 ft	0.53
100 ft	ND
110 ft	ND

AA-Q-1	
Depth	Total Herbicides (ppb)
50 ft	3.23
80 ft	0.19
120 ft	ND
127.5 ft	2.2

AA-O-3	
Depth	Total Herbicides (ppb)
28 ft	ND
68 ft	4.4
108 ft	0.086
128 ft	ND

AA-Q-3	
Depth	Total Herbicides (ppb)
50 ft	ND
80 ft	12.98
120 ft	1

AA-Q-2	
Depth	Total Herbicides (ppb)
60 ft	ND
80 ft	24.56
120 ft	ND
130 ft	ND

UAA-2/OS-2	
Depth	Total Herbicides (ppb)
20 ft	ND
60 ft	ND
100 ft	0.216
124 ft	87.18

AA-Q-4	
Depth	Total Herbicides (ppb)
50 ft	ND
80 ft	1.61
110 ft	0.49

SEEP-Q-1	
Depth	Total Herbicides (ppb)
-	ND

AA-Q-5	
Depth	Total Herbicides (ppb)
45 ft	27
85 ft	33
106 ft	ND

AA-O-2	
Depth	Total Herbicides (ppb)
13 ft	ND
53 ft	1.479
93 ft	0.5
124 ft	0.23

AA-S-1	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	ND
104 ft	ND
124 ft	ND

AA-O-1	
Depth	Total Herbicides (ppb)
16 ft	0.72
56 ft	0.18
96 ft	ND
120 ft	ND

AA-S-3	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	ND
104 ft	ND
132 ft	0.12

AA-Q-6	
Depth	Total Herbicides (ppb)
24 ft	19
64 ft	ND
104 ft	ND
110 ft	1

SEEP-Q-2	
Depth	Total Herbicides (ppb)
-	ND

AA-S-2	
Depth	Total Herbicides (ppb)
28 ft	ND
78 ft	ND
118.5 ft	0.099

UAA-3/OS-3	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	0.23
104 ft	1.3
116 ft	0.086

AA-Q-7	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	0.48
104 ft	ND

AA-Q-8	
Depth	Total Herbicides (ppb)
24 ft	ND
64 ft	ND
104 ft	ND
111 ft	ND

UAA-4/OS-4	
Depth	Total Herbicides (ppb)
20 ft	ND
60 ft	ND
100 ft	ND
113 ft	ND

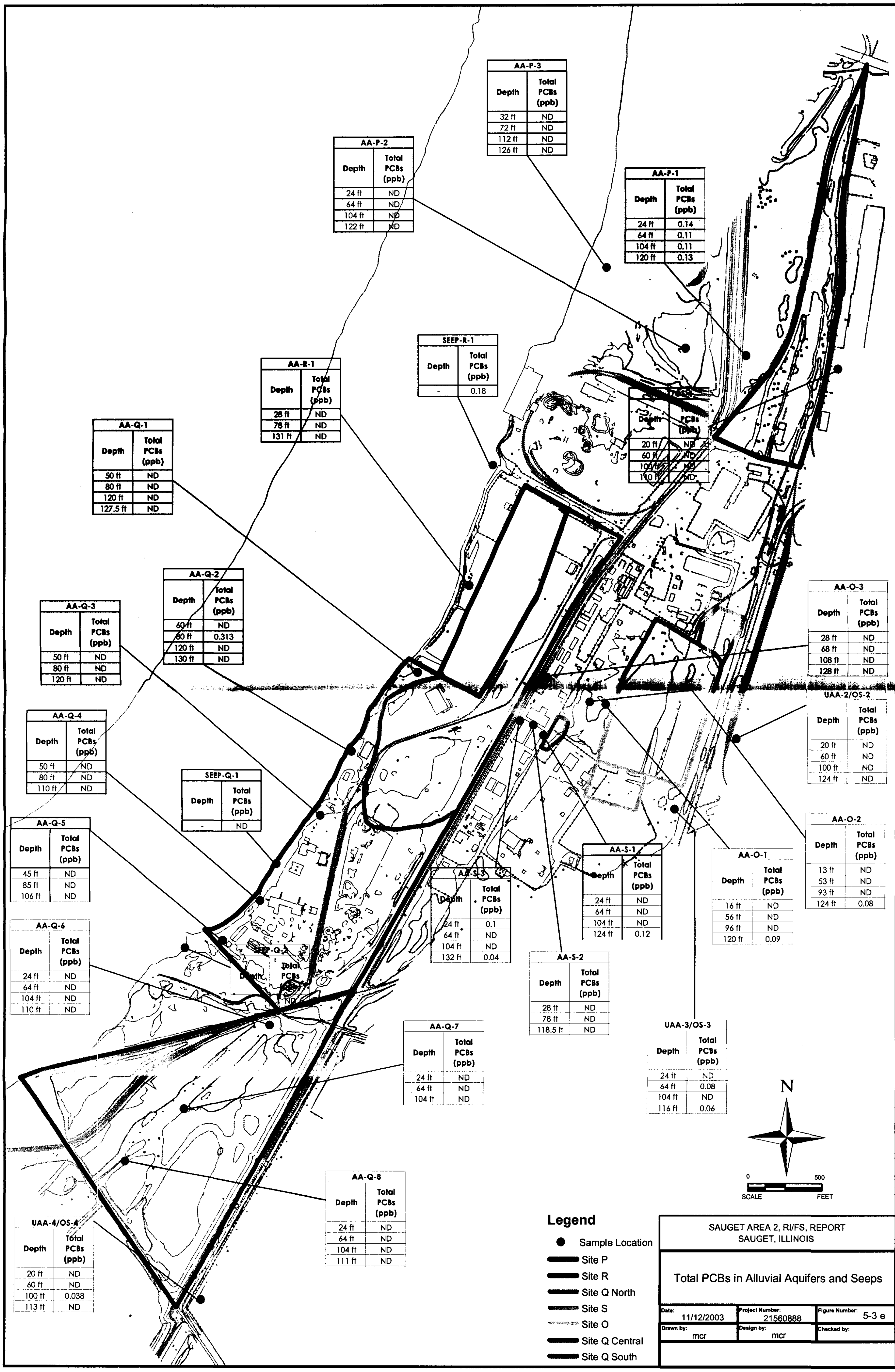
Legend

- Sample Location
- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Herbicides in Alluvial Aquifers and Seeps

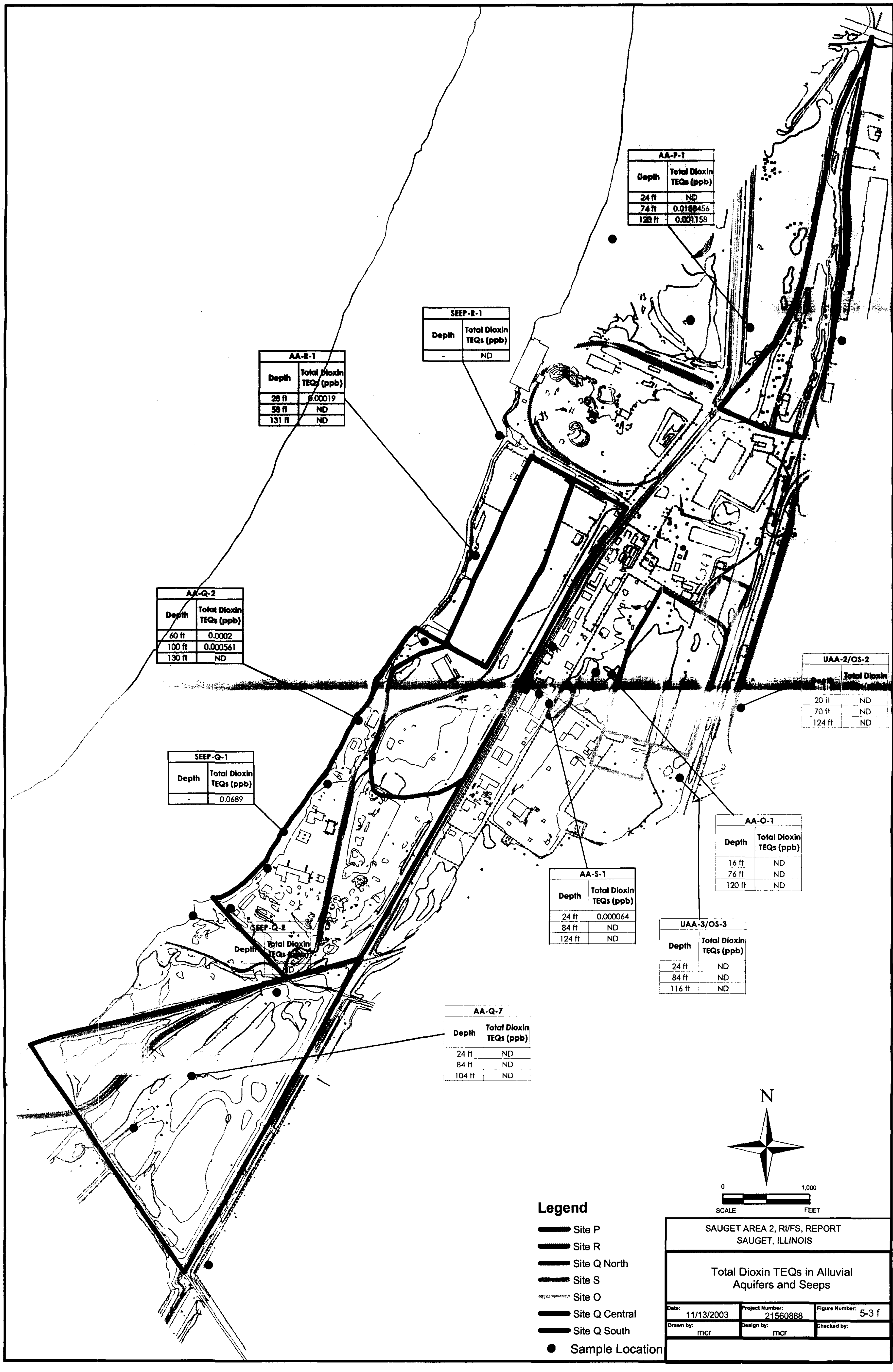
Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-3 d
Drawn by: mcr	Design by: mcr	Checked by:

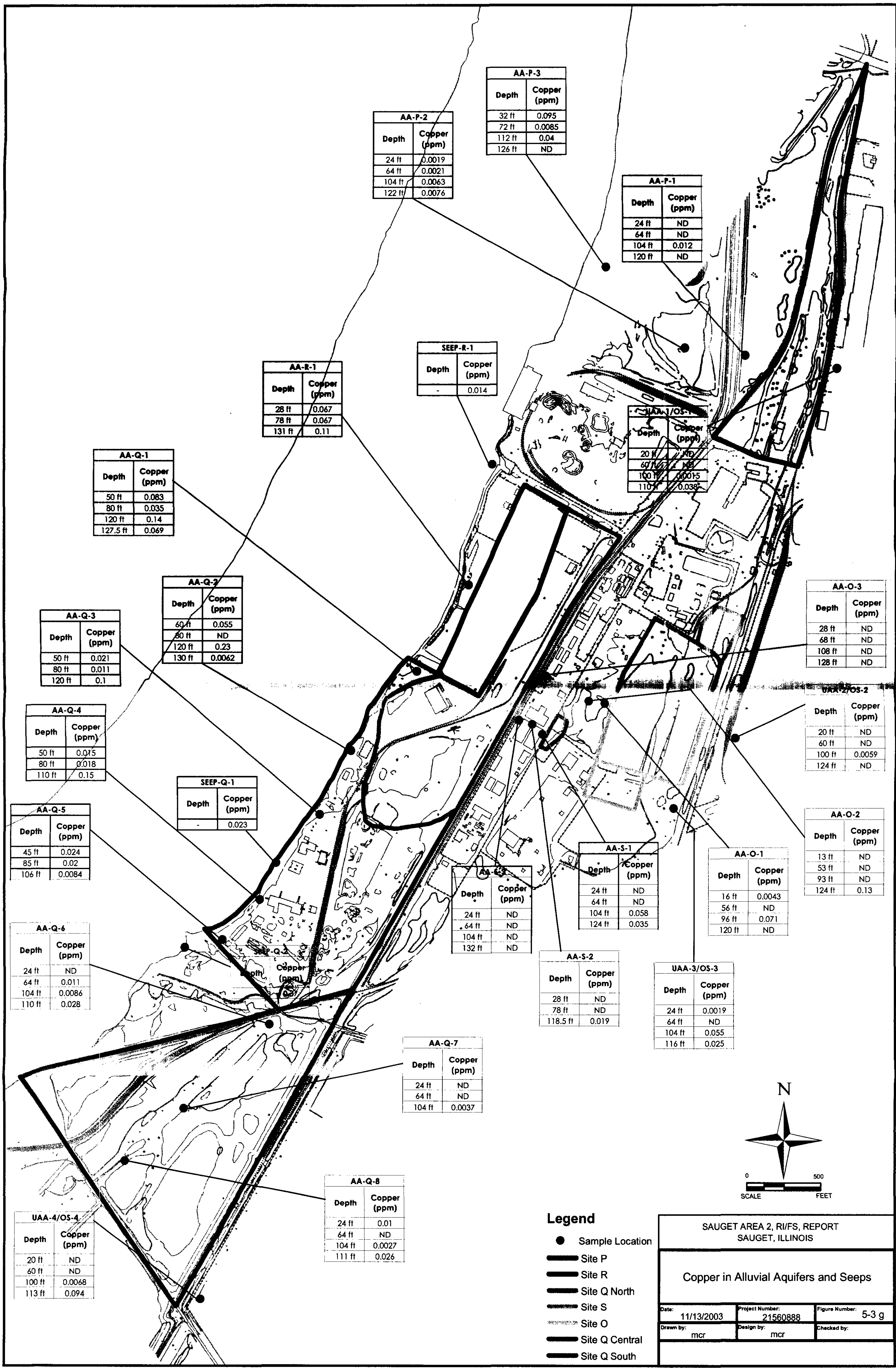


SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total PCBs in Alluvial Aquifers and Seeps

Date: 11/12/2003	Project Number: 21560888	Figure Number: 5-3 e
Drawn by: mcr	Design by: mcr	Checked by:


AA-P-1
Depth | Total Dioxin TEQs (ppb)
24 ft | ND
74 ft | 0.0188456
120 ft | 0.001158
SEEP-R-1
Depth | Total Dioxin TEQs (ppb)
- | ND
AA-R-1
Depth | Total Dioxin TEQs (ppb)
28 ft | 0.00019
58 ft | ND
131 ft | ND
AA-Q-2
Depth | Total Dioxin TEQs (ppb)
60 ft | 0.0002
100 ft | 0.000561
130 ft | ND
UAA-2/OS-2
Depth | Total Dioxin
20 ft | ND
70 ft | ND
124 ft | ND
SEEP-Q-1
Depth | Total Dioxin TEQs (ppb)
- | 0.0689
AA-O-1
Depth | Total Dioxin TEQs (ppb)
16 ft | ND
76 ft | ND
120 ft | ND
AA-S-1
Depth | Total Dioxin TEQs (ppb)
24 ft | 0.000064
84 ft | ND
124 ft | ND
SEEP-Q-2
Depth | Total Dioxin TEQs (ppb)
ND
UAA-3/OS-3
Depth | Total Dioxin TEQs (ppb)
24 ft | ND
84 ft | ND
116 ft | ND
AA-Q-7
Depth | Total Dioxin TEQs (ppb)
24 ft | ND
84 ft | ND
104 ft | ND
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Location
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Alluvial Aquifers and Seeps
Date: 11/13/2003
Project Number: 21560888
Figure Number: 5-3 f
Drawn by: mcr
Design by: mcr
Checked by:



AA-P-3	
Depth	Copper (ppm)
32 ft	0.095
72 ft	0.0085
112 ft	0.04
126 ft	ND

AA-P-2	
Depth	Copper (ppm)
24 ft	0.0019
64 ft	0.0021
104 ft	0.0063
122 ft	0.0076

AA-P-1	
Depth	Copper (ppm)
24 ft	ND
64 ft	ND
104 ft	0.012
120 ft	ND

SEEP-R-1	
Depth	Copper (ppm)
-	0.014

AA-R-1	
Depth	Copper (ppm)
28 ft	0.067
78 ft	0.067
131 ft	0.11

UAA-1/OS-1	
Depth	Copper (ppm)
20 ft	ND
60 ft	ND
100 ft	0.0015
110 ft	0.038

AA-Q-1	
Depth	Copper (ppm)
50 ft	0.083
80 ft	0.035
120 ft	0.14
127.5 ft	0.069

AA-Q-2	
Depth	Copper (ppm)
60 ft	0.055
80 ft	ND
120 ft	0.23
130 ft	0.0062

AA-Q-3	
Depth	Copper (ppm)
50 ft	0.021
80 ft	0.011
120 ft	0.1

AA-O-3	
Depth	Copper (ppm)
28 ft	ND
68 ft	ND
108 ft	ND
128 ft	ND

AA-Q-4	
Depth	Copper (ppm)
50 ft	0.015
80 ft	0.018
110 ft	0.15

UAA-2/OS-2	
Depth	Copper (ppm)
20 ft	ND
60 ft	ND
100 ft	0.0059
124 ft	ND

SEEP-Q-1	
Depth	Copper (ppm)
-	0.023

AA-Q-5	
Depth	Copper (ppm)
45 ft	0.024
85 ft	0.02
106 ft	0.0084

AA-O-2	
Depth	Copper (ppm)
13 ft	ND
53 ft	ND
93 ft	ND
124 ft	0.13

AA-S-1	
Depth	Copper (ppm)
24 ft	ND
64 ft	ND
104 ft	0.058
124 ft	0.035

AA-O-1	
Depth	Copper (ppm)
16 ft	0.0043
56 ft	ND
96 ft	0.071
120 ft	ND

AA-[illegible]	
Depth	Copper (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
132 ft	ND

AA-Q-6	
Depth	Copper (ppm)
24 ft	ND
64 ft	0.011
104 ft	0.0086
110 ft	0.028

SEEP-Q-2	
Depth	Copper (ppm)
[illegible]	[illegible]

AA-S-2	
Depth	Copper (ppm)
28 ft	ND
78 ft	ND
118.5 ft	0.019

UAA-3/OS-3	
Depth	Copper (ppm)
24 ft	0.0019
64 ft	ND
104 ft	0.055
116 ft	0.025

AA-Q-7	
Depth	Copper (ppm)
24 ft	ND
64 ft	ND
104 ft	0.0037

AA-Q-8	
Depth	Copper (ppm)
24 ft	0.01
64 ft	ND
104 ft	0.0027
111 ft	0.026

UAA-4/OS-4	
Depth	Copper (ppm)
20 ft	ND
60 ft	ND
100 ft	0.0068
113 ft	0.094

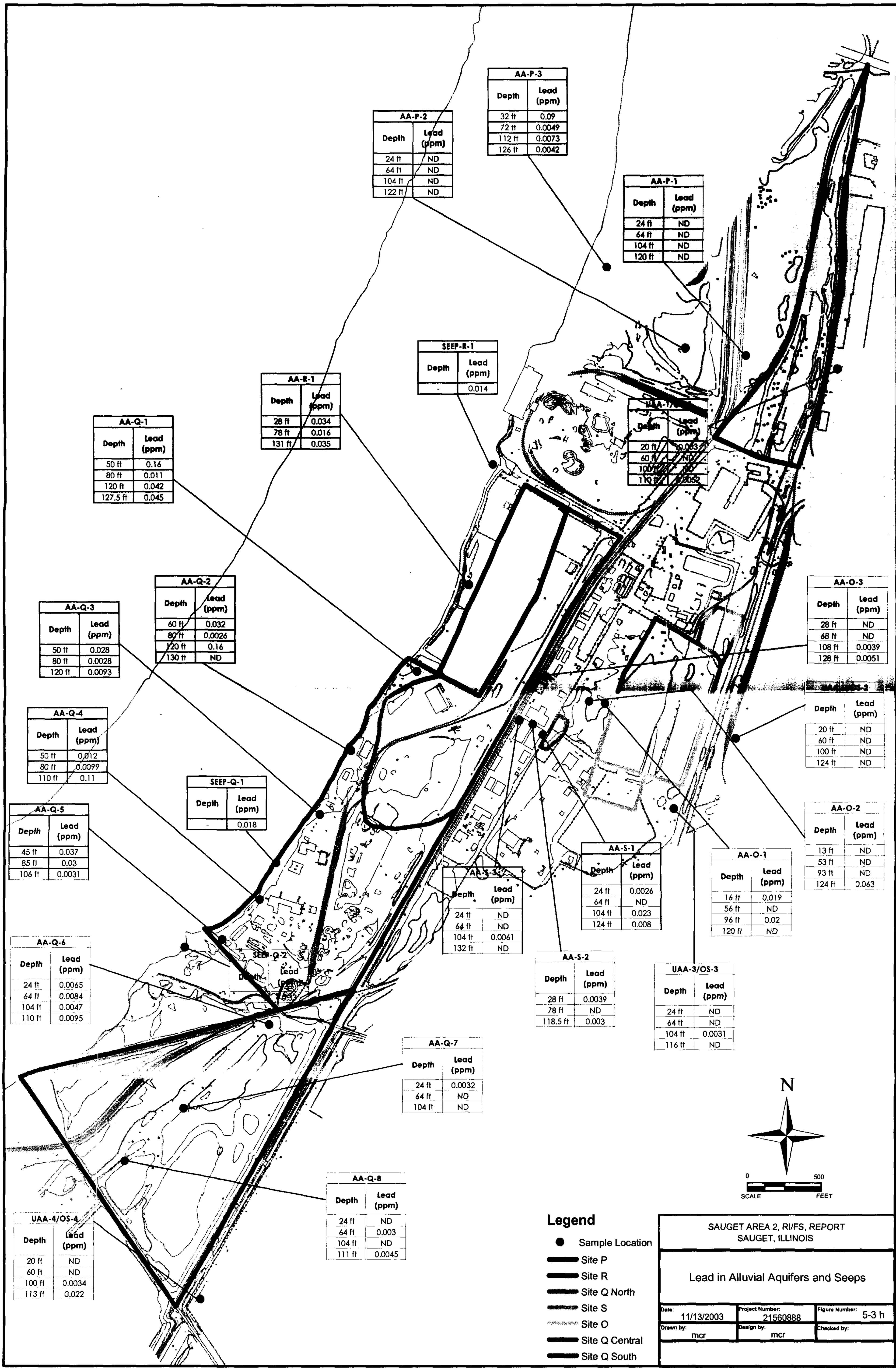
Legend

- Sample Location
- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Copper in Alluvial Aquifers and Seeps

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-3 g
Drawn by: mcr	Design by: mcr	Checked by:



AA-P-3

Depth	Lead (ppm)
32 ft	0.09
72 ft	0.0049
112 ft	0.0073
126 ft	0.0042

AA-P-2

Depth	Lead (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
122 ft	ND

AA-P-1

Depth	Lead (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
120 ft	ND

SEEP-R-1

Depth	Lead (ppm)
-	0.014

AA-R-1

Depth	Lead (ppm)
28 ft	0.034
78 ft	0.016
131 ft	0.035

UAA-1/[illegible]

Depth	Lead (ppm)
20 ft	[illegible]
60 ft	ND
100 ft	ND
110 ft	0.0052

AA-Q-1

Depth	Lead (ppm)
50 ft	0.16
80 ft	0.011
120 ft	0.042
127.5 ft	0.045

AA-Q-2

Depth	Lead (ppm)
60 ft	0.032
80 ft	0.0026
120 ft	0.16
130 ft	ND

AA-Q-3

Depth	Lead (ppm)
50 ft	0.028
80 ft	0.0028
120 ft	0.0093

AA-O-3

Depth	Lead (ppm)
28 ft	ND
68 ft	ND
108 ft	0.0039
128 ft	0.0051

[illegible]S-2

Depth	Lead (ppm)
20 ft	ND
60 ft	ND
100 ft	ND
124 ft	ND

AA-Q-4

Depth	Lead (ppm)
50 ft	0.012
80 ft	0.0099
110 ft	0.11

SEEP-Q-1

Depth	Lead (ppm)
-	0.018

AA-Q-5

Depth	Lead (ppm)
45 ft	0.037
85 ft	0.03
106 ft	0.0031

AA-O-2

Depth	Lead (ppm)
13 ft	ND
53 ft	ND
93 ft	ND
124 ft	0.063

AA-S-1

Depth	Lead (ppm)
24 ft	0.0026
64 ft	ND
104 ft	0.023
124 ft	0.008

AA-O-1

Depth	Lead (ppm)
16 ft	0.019
56 ft	ND
96 ft	0.02
120 ft	ND

AA-S-3

Depth	Lead (ppm)
24 ft	ND
64 ft	ND
104 ft	0.0061
132 ft	ND

AA-Q-6

Depth	Lead (ppm)
24 ft	0.0065
64 ft	0.0084
104 ft	0.0047
110 ft	0.0095

SEEP-Q-2

Depth	Lead (ppm)
[illegible]	[illegible]

AA-S-2

Depth	Lead (ppm)
28 ft	0.0039
78 ft	ND
118.5 ft	0.003

UAA-3/OS-3

Depth	Lead (ppm)
24 ft	ND
64 ft	ND
104 ft	0.0031
116 ft	ND

AA-Q-7

Depth	Lead (ppm)
24 ft	0.0032
64 ft	ND
104 ft	ND

N
0
500
SCALE
FEET

AA-Q-8

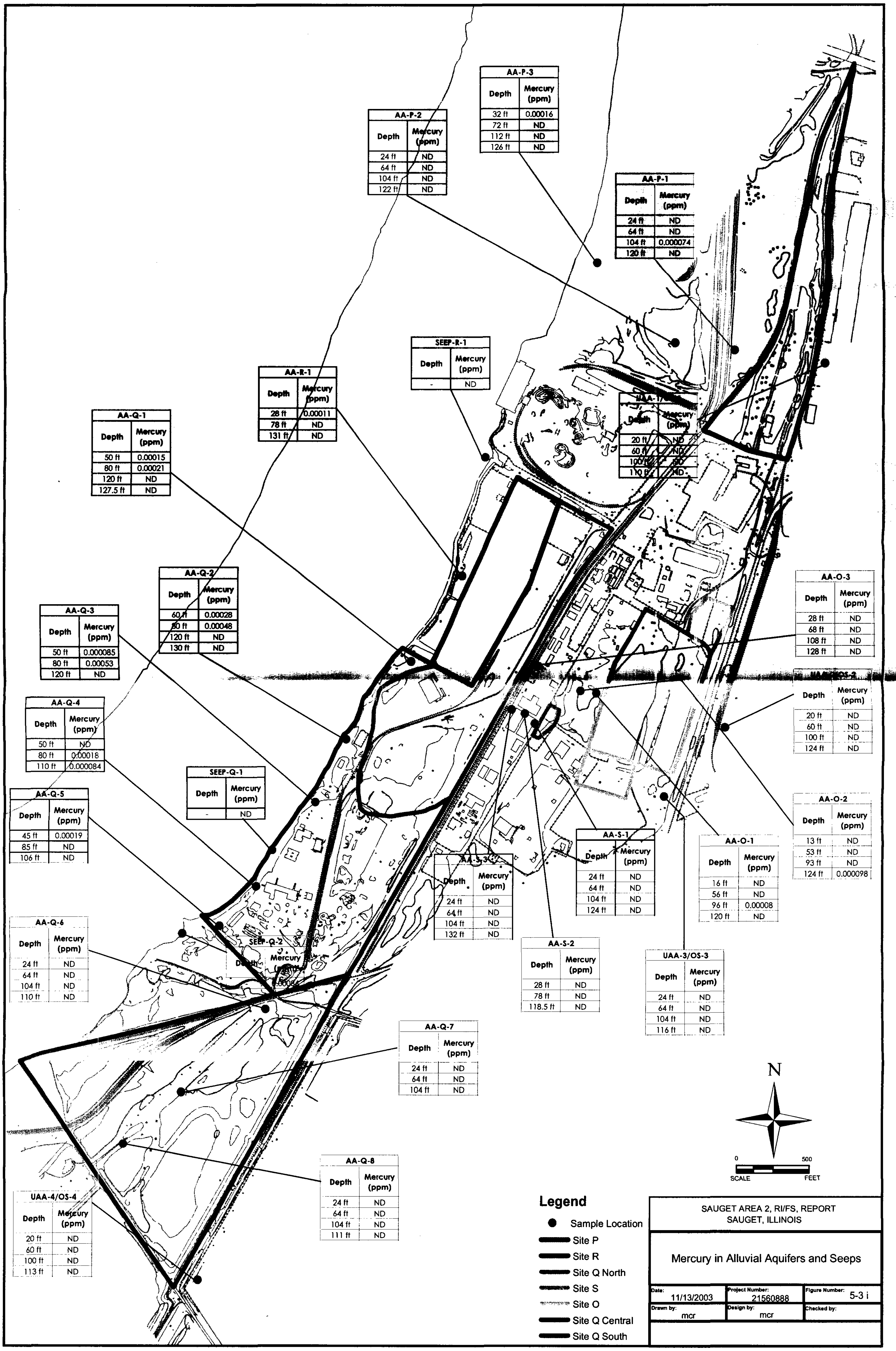
Depth	Lead (ppm)
24 ft	ND
64 ft	0.003
104 ft	ND
111 ft	0.0045

UAA-4/OS-4

Depth	Lead (ppm)
20 ft	ND
60 ft	ND
100 ft	0.0034
113 ft	0.022

Legend
Sample Location
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Alluvial Aquifers and Seeps
Date: 11/13/2003
Project Number: 21560888
Figure Number: 5-3 h
Drawn by: mcr
Design by: mcr
Checked by:



AA-P-3

Depth	Mercury (ppm)
32 ft	0.00016
72 ft	ND
112 ft	ND
126 ft	ND

AA-P-2

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
122 ft	ND

AA-P-1

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	0.000074
120 ft	ND

SEEP-R-1

Depth	Mercury (ppm)
-	ND

AA-R-1

Depth	Mercury (ppm)
28 ft	0.00011
78 ft	ND
131 ft	ND

UAA-1

Depth	Mercury (ppm)
20 ft	ND
60 ft	ND
100 ft	ND
110 ft	ND

AA-Q-1

Depth	Mercury (ppm)
50 ft	0.00015
80 ft	0.00021
120 ft	ND
127.5 ft	ND

AA-Q-2

Depth	Mercury (ppm)
60 ft	0.00028
80 ft	0.00048
120 ft	ND
130 ft	ND

AA-Q-3

Depth	Mercury (ppm)
50 ft	0.000085
80 ft	0.00053
120 ft	ND

AA-Q-4

Depth	Mercury (ppm)
50 ft	ND
80 ft	0.00018
110 ft	0.000084

AA-Q-5

Depth	Mercury (ppm)
45 ft	0.00019
85 ft	ND
106 ft	ND

SEEP-Q-1

Depth	Mercury (ppm)
-	ND

AA-O-3

Depth	Mercury (ppm)
28 ft	ND
68 ft	ND
108 ft	ND
128 ft	ND

UAA-2/OS-2

Depth	Mercury (ppm)
20 ft	ND
60 ft	ND
100 ft	ND
124 ft	ND

AA-O-2

Depth	Mercury (ppm)
13 ft	ND
53 ft	ND
93 ft	ND
124 ft	0.000098

AA-S-1

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
124 ft	ND

AA-O-1

Depth	Mercury (ppm)
16 ft	ND
56 ft	ND
96 ft	0.00008
120 ft	ND

AA-S-3

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
132 ft	ND

AA-S-2

Depth	Mercury (ppm)
28 ft	ND
78 ft	ND
118.5 ft	ND

UAA-3/OS-3

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
116 ft	ND

AA-Q-6

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
110 ft	ND

SEEP-Q-2

Depth	Mercury (ppm)
-	.0008

AA-Q-7

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND

AA-Q-8

Depth	Mercury (ppm)
24 ft	ND
64 ft	ND
104 ft	ND
111 ft	ND

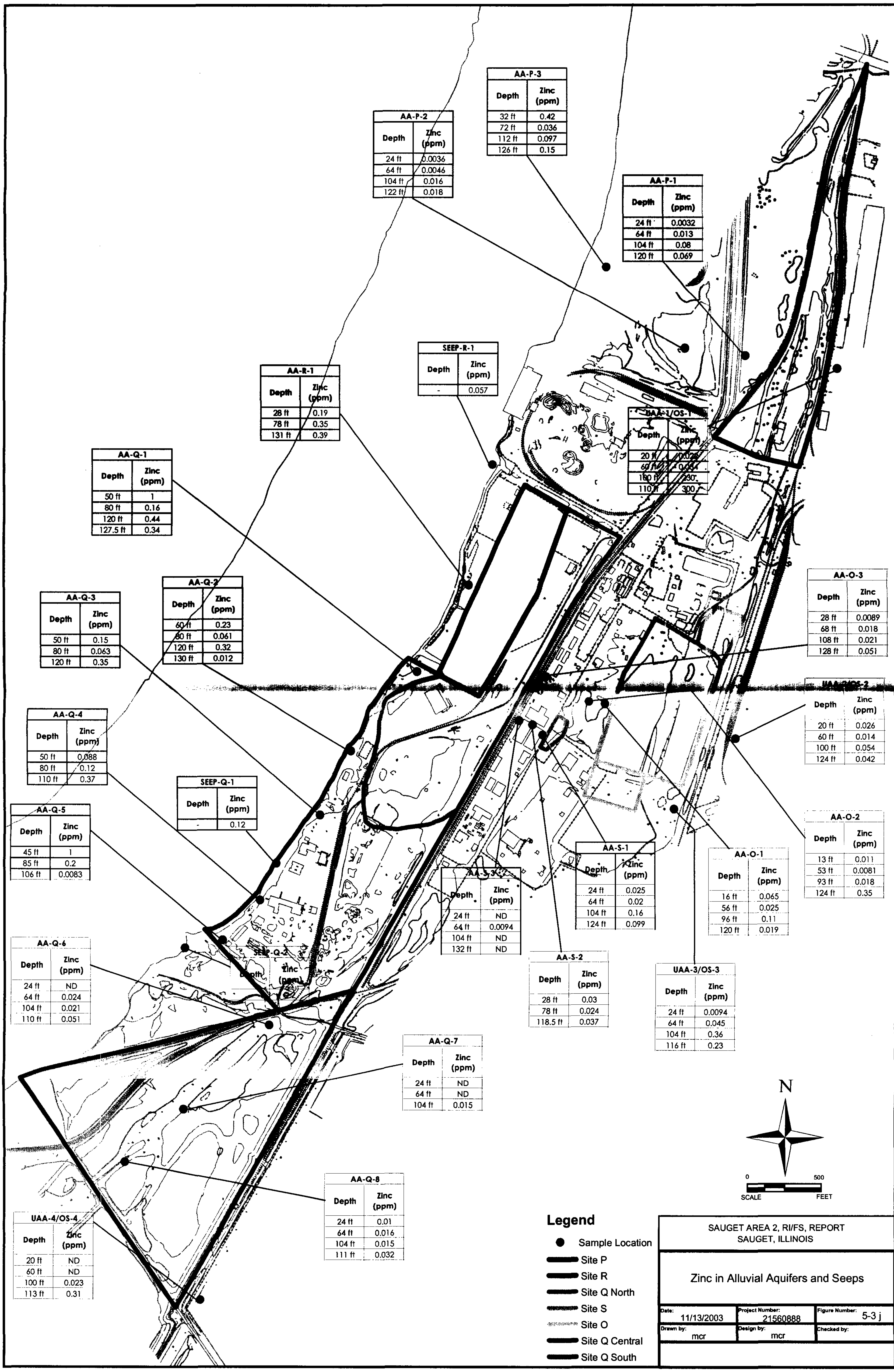
UAA-4/OS-4

Depth	Mercury (ppm)
20 ft	ND
60 ft	ND
100 ft	ND
113 ft	ND

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Mercury in Alluvial Aquifers and Seeps

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-3 i
Drawn by: mcr	Design by: mcr	Checked by:



AA-P-3

Depth	Zinc (ppm)
32 ft	0.42
72 ft	0.036
112 ft	0.097
126 ft	0.15

AA-P-2

Depth	Zinc (ppm)
24 ft	0.0036
64 ft	0.0046
104 ft	0.016
122 ft	0.018

AA-P-1

Depth	Zinc (ppm)
24 ft	0.0032
64 ft	0.013
104 ft	0.08
120 ft	0.069

SEEP-R-1

Depth	Zinc (ppm)
-	0.057

AA-R-1

Depth	Zinc (ppm)
28 ft	0.19
78 ft	0.35
131 ft	0.39

UAA-1/OS-1

Depth	Zinc (ppm)
20 ft	0.028
60 ft	0.054
180 ft	230
110 ft	300

AA-Q-1

Depth	Zinc (ppm)
50 ft	1
80 ft	0.16
120 ft	0.44
127.5 ft	0.34

AA-O-3

Depth	Zinc (ppm)
28 ft	0.0089
68 ft	0.018
108 ft	0.021
128 ft	0.051

AA-Q-2

Depth	Zinc (ppm)
60 ft	0.23
80 ft	0.061
120 ft	0.32
130 ft	0.012

AA-Q-3

Depth	Zinc (ppm)
50 ft	0.15
80 ft	0.063
120 ft	0.35

UAA-2/OS-2

Depth	Zinc (ppm)
20 ft	0.026
60 ft	0.014
100 ft	0.054
124 ft	0.042

AA-Q-4

Depth	Zinc (ppm)
50 ft	0.088
80 ft	0.12
110 ft	0.37

SEEP-Q-1

Depth	Zinc (ppm)
-	0.12

AA-Q-5

Depth	Zinc (ppm)
45 ft	1
85 ft	0.2
106 ft	0.0083

AA-O-2

Depth	Zinc (ppm)
13 ft	0.011
53 ft	0.0081
93 ft	0.018
124 ft	0.35

AA-S-1

Depth	Zinc (ppm)
24 ft	0.025
64 ft	0.02
104 ft	0.16
124 ft	0.099

AA-O-1

Depth	Zinc (ppm)
16 ft	0.065
56 ft	0.025
96 ft	0.11
120 ft	0.019

AA-S-3

Depth	Zinc (ppm)
24 ft	ND
64 ft	0.0094
104 ft	ND
132 ft	ND

AA-Q-6

Depth	Zinc (ppm)
24 ft	ND
64 ft	0.024
104 ft	0.021
110 ft	0.051

SEEP-Q-2

Depth	Zinc (ppm)

AA-S-2

Depth	Zinc (ppm)
28 ft	0.03
78 ft	0.024
118.5 ft	0.037

UAA-3/OS-3

Depth	Zinc (ppm)
24 ft	0.0094
64 ft	0.045
104 ft	0.36
116 ft	0.23

AA-Q-7

Depth	Zinc (ppm)
24 ft	ND
64 ft	ND
104 ft	0.015

AA-Q-8

Depth	Zinc (ppm)
24 ft	0.01
64 ft	0.016
104 ft	0.015
111 ft	0.032

UAA-4/OS-4

Depth	Zinc (ppm)
20 ft	ND
60 ft	ND
100 ft	0.023
113 ft	0.31

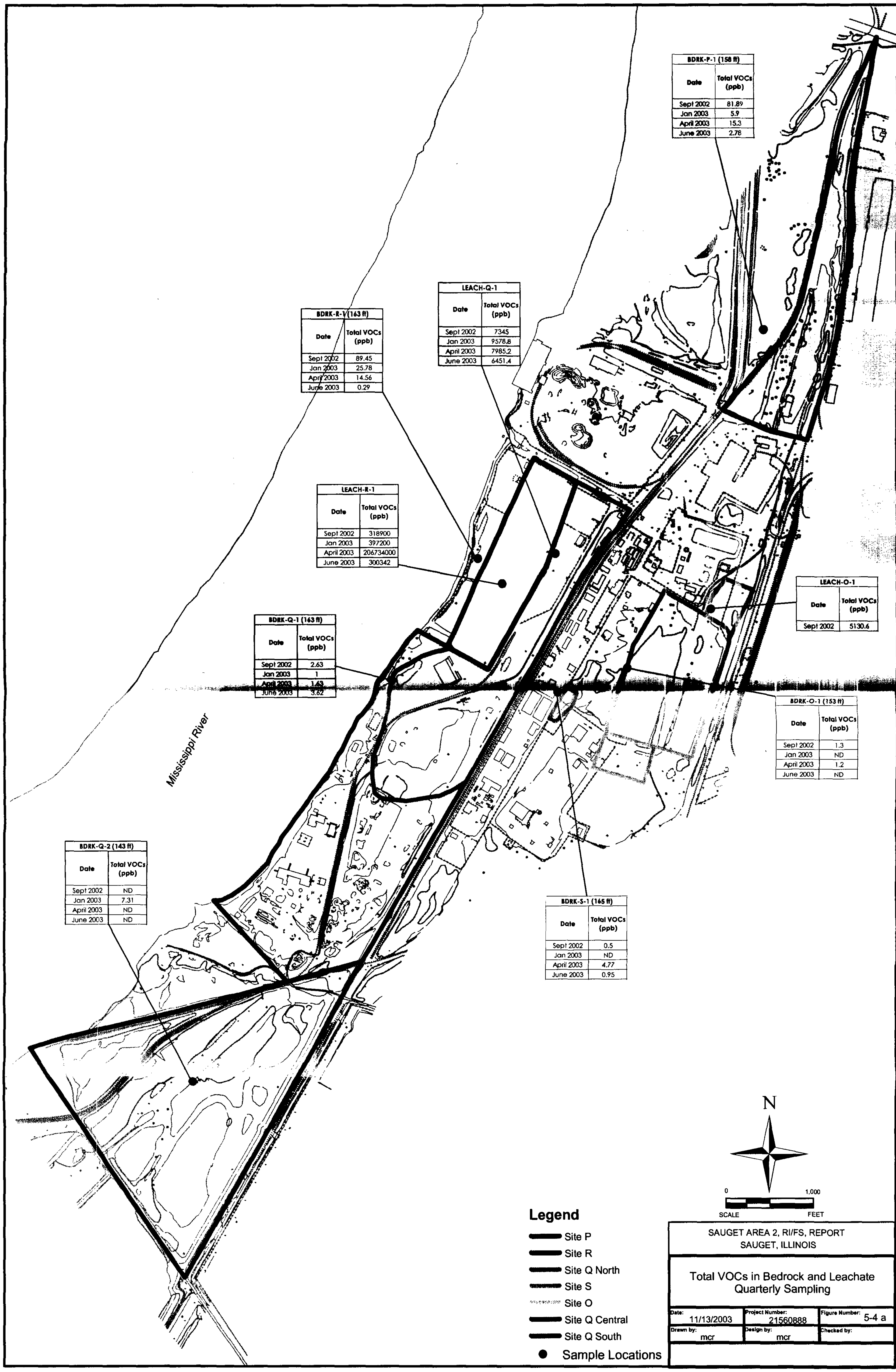
Legend

- Sample Location
- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Zinc in Alluvial Aquifers and Seeps

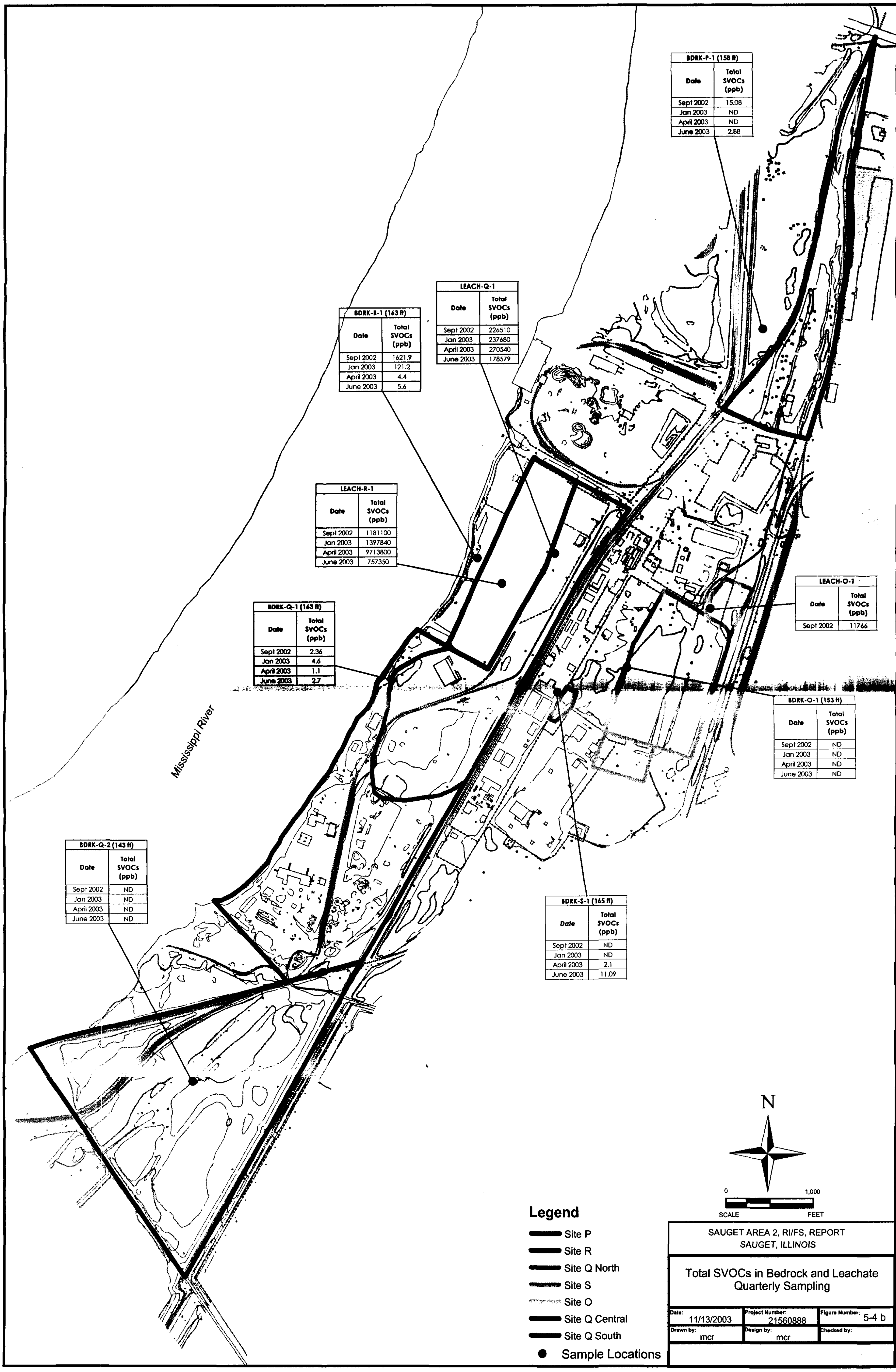
Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-3 j
Drawn by: mcr	Design by: mcr	Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total VOCs in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 a
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)	
Date	Total SVOCs (ppb)
Sept 2002	15.08
Jan 2003	ND
April 2003	ND
June 2003	2.88

LEACH-Q-1	
Date	Total SVOCs (ppb)
Sept 2002	226510
Jan 2003	237680
April 2003	270540
June 2003	178579

BDRK-R-1 (163 ft)	
Date	Total SVOCs (ppb)
Sept 2002	1621.9
Jan 2003	121.2
April 2003	4.4
June 2003	5.6

LEACH-R-1	
Date	Total SVOCs (ppb)
Sept 2002	1181100
Jan 2003	1397840
April 2003	9713800
June 2003	757350

LEACH-O-1	
Date	Total SVOCs (ppb)
Sept 2002	11766

BDRK-Q-1 (163 ft)	
Date	Total SVOCs (ppb)
Sept 2002	2.36
Jan 2003	4.6
April 2003	1.1
June 2003	2.7

BDRK-O-1 (153 ft)	
Date	Total SVOCs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

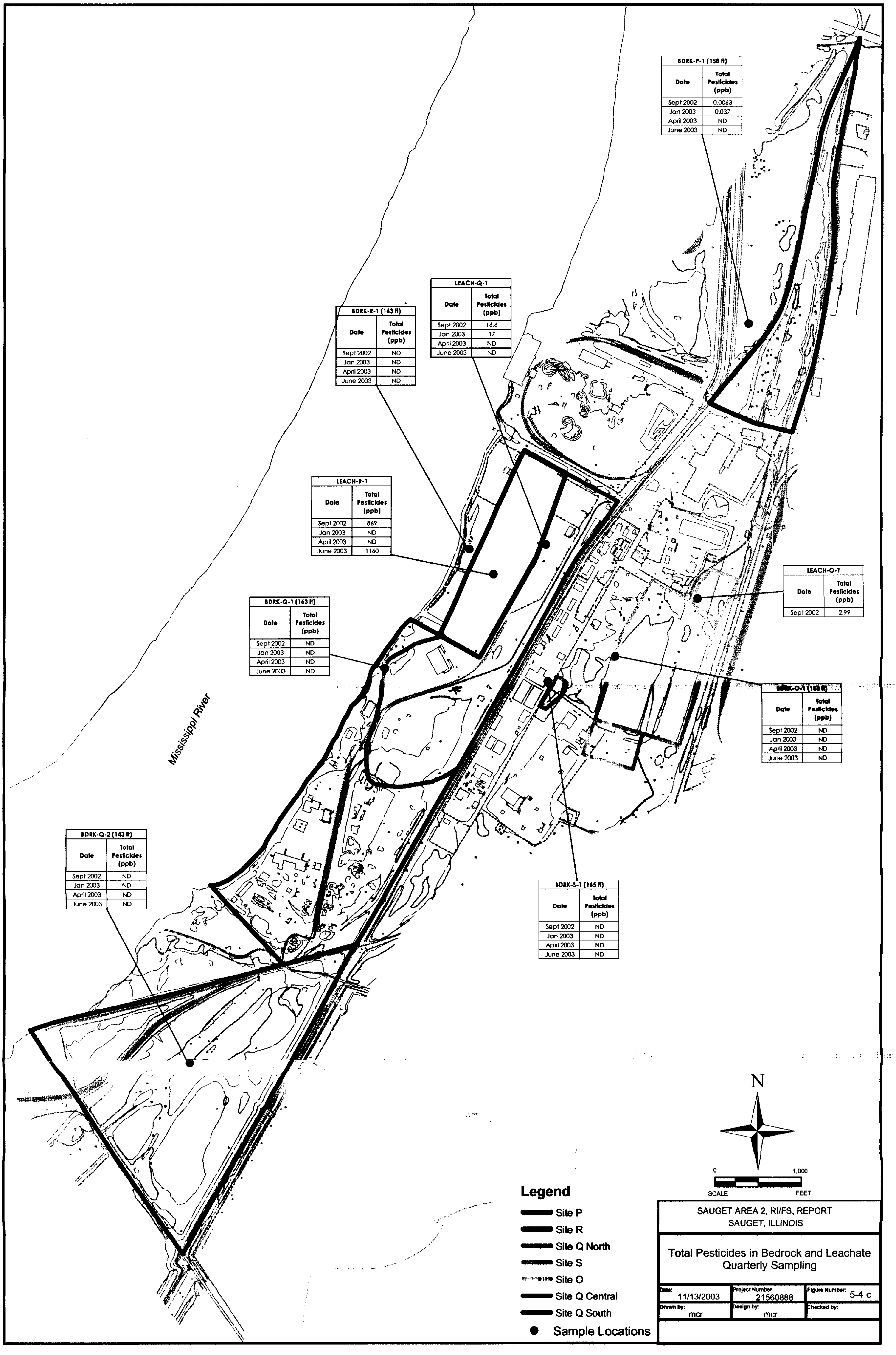
BDRK-Q-2 (143 ft)	
Date	Total SVOCs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-S-1 (165 ft)	
Date	Total SVOCs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	2.1
June 2003	11.09

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total SVOCs in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 b
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)	
Date	Total Pesticides (ppb)
Sept 2002	0.0063
Jan 2003	0.037
April 2003	ND
June 2003	ND

LEACH-Q-1	
Date	Total Pesticides (ppb)
Sept 2002	16.6
Jan 2003	17
April 2003	ND
June 2003	ND

BDRK-R-1 (163 ft)	
Date	Total Pesticides (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

LEACH-R-1	
Date	Total Pesticides (ppb)
Sept 2002	869
Jan 2003	ND
April 2003	ND
June 2003	1160

LEACH-O-1	
Date	Total Pesticides (ppb)
Sept 2002	2.99

BDRK-Q-1 (163 ft)	
Date	Total Pesticides (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-O-1 (153 ft)	
Date	Total Pesticides (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

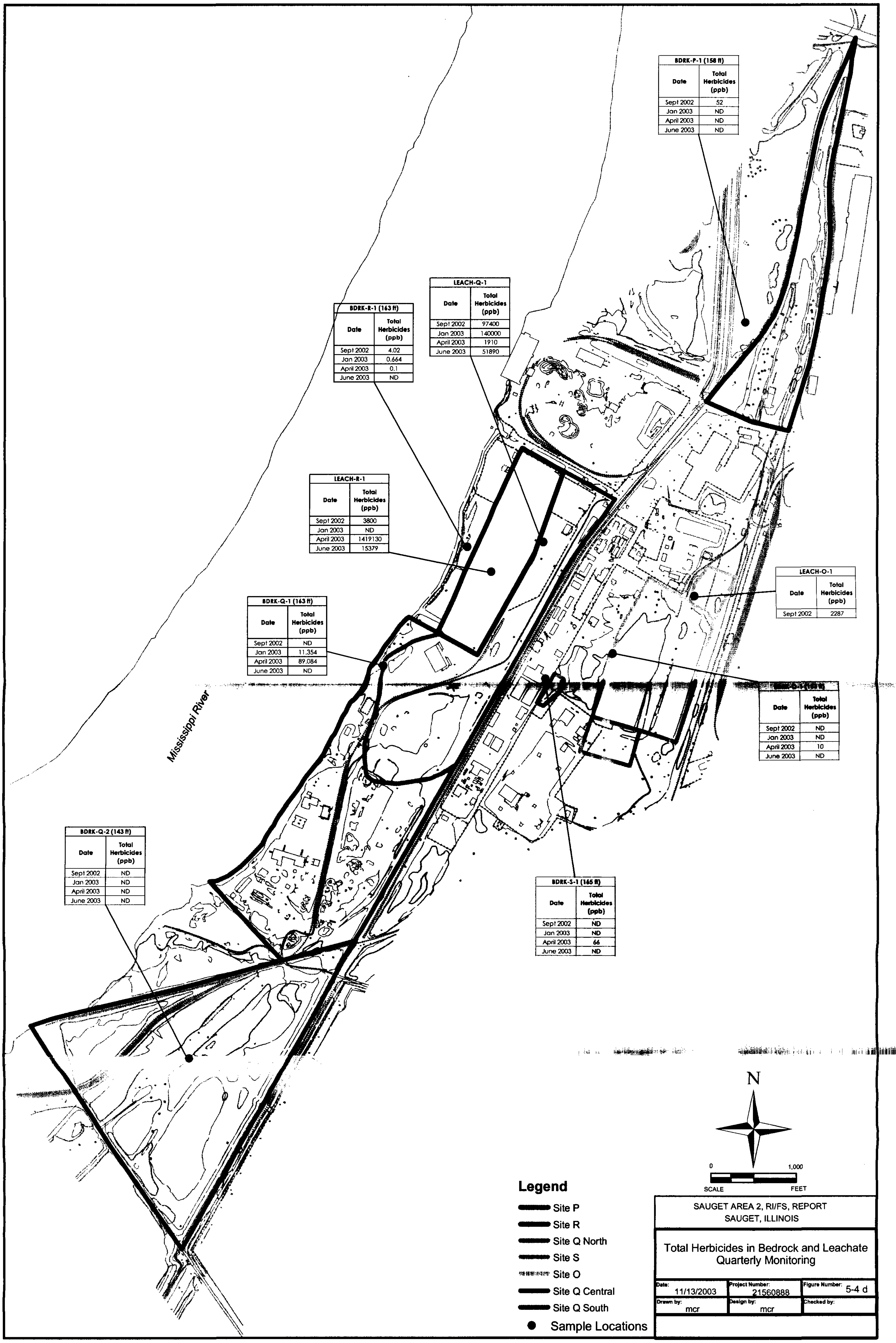
BDRK-Q-2 (143 ft)	
Date	Total Pesticides (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-S-1 (165 ft)	
Date	Total Pesticides (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Pesticides in Bedrock and Leachate Quarterly Sampling

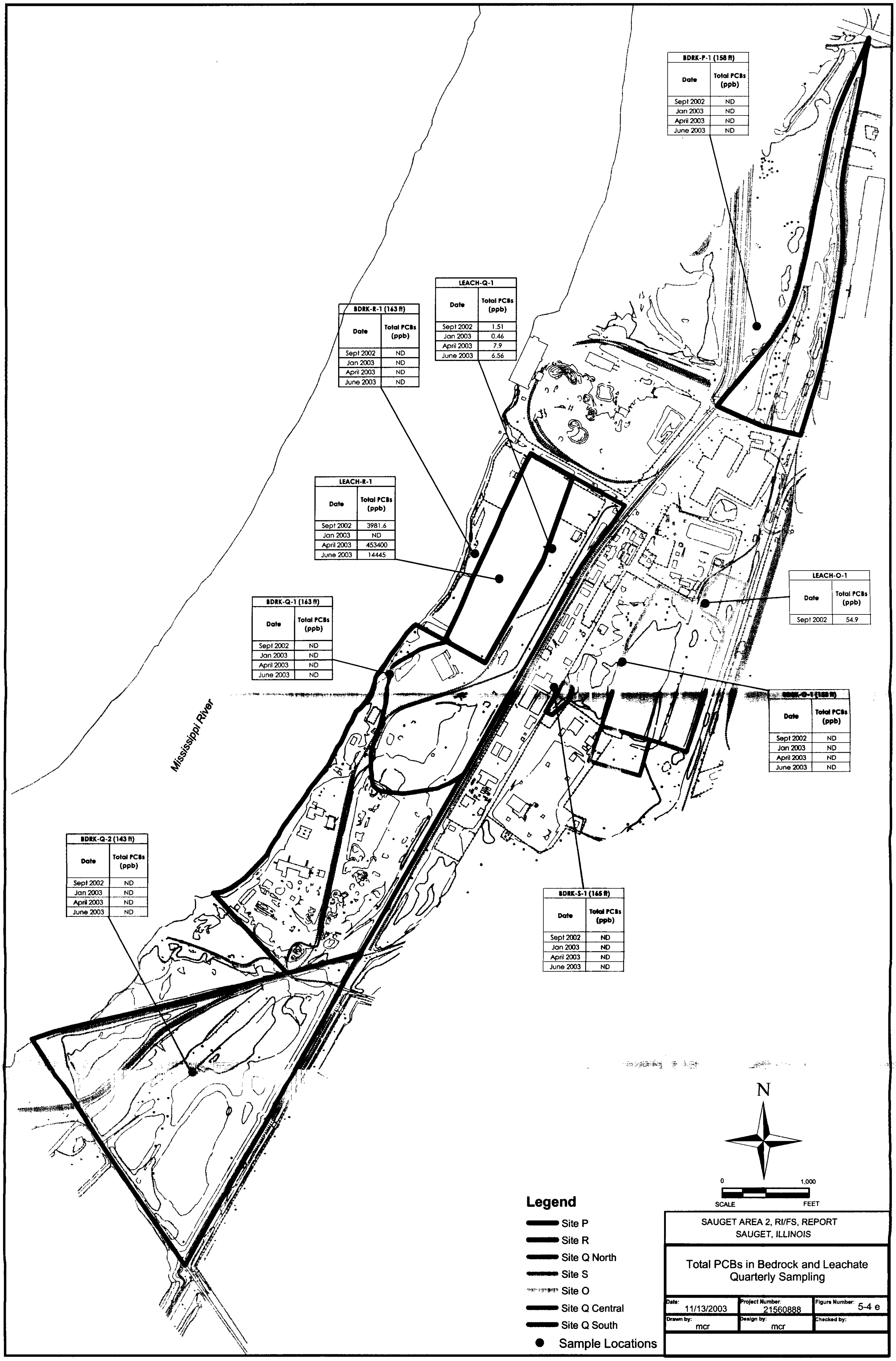
Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 c
Drawn by: mcr	Design by: mcr	Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Herbicides in Bedrock and Leachate Quarterly Monitoring

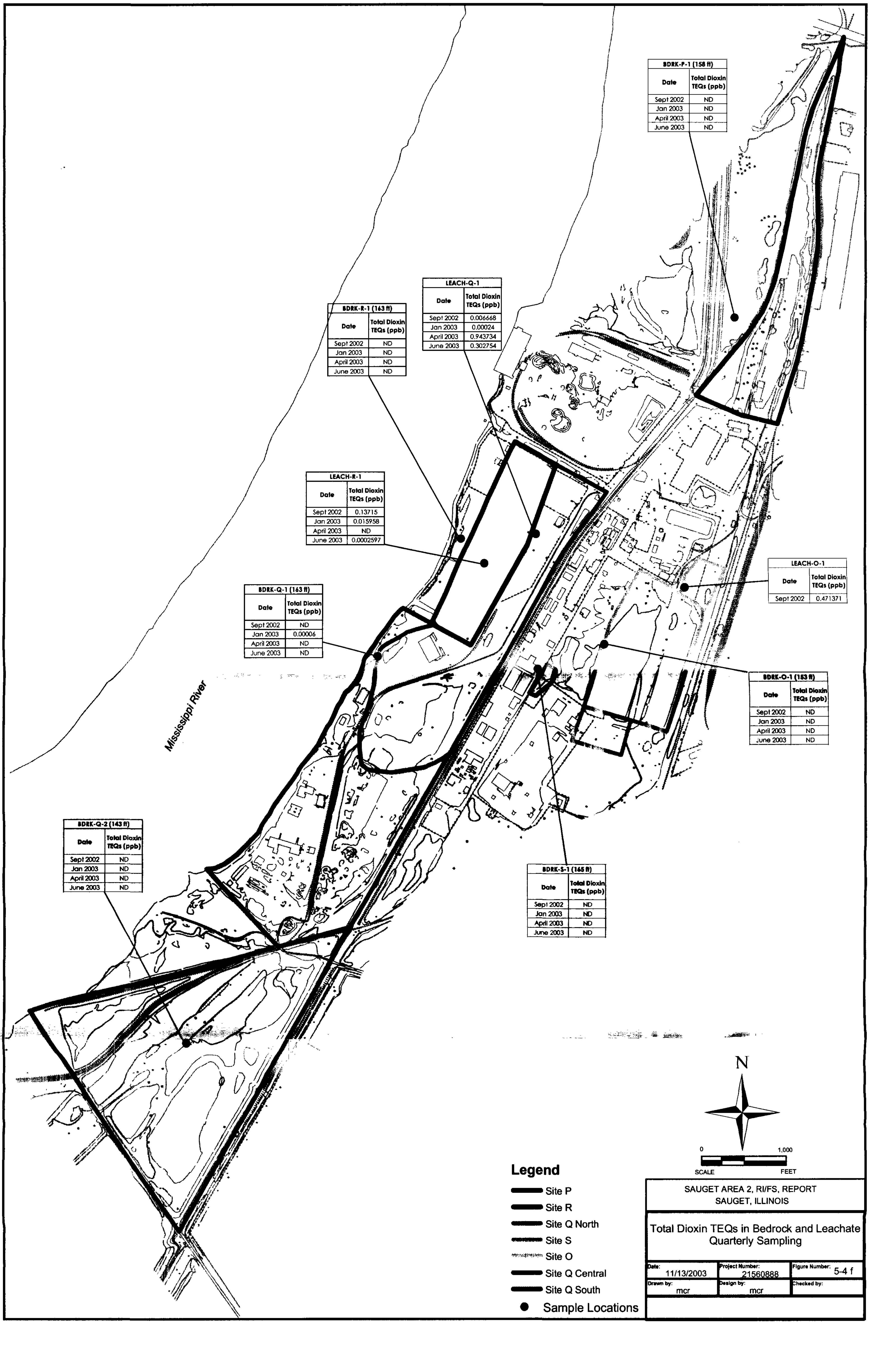
Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 d
Drawn by: mcr	Design by: mcr	Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total PCBs in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 e
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

LEACH-Q-1	
Date	Total Dioxin TEQs (ppb)
Sept 2002	0.006668
Jan 2003	0.00024
April 2003	0.943734
June 2003	0.302754

BDRK-R-1 (163 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

LEACH-R-1	
Date	Total Dioxin TEQs (ppb)
Sept 2002	0.13715
Jan 2003	0.015958
April 2003	ND
June 2003	0.0002597

LEACH-O-1	
Date	Total Dioxin TEQs (ppb)
Sept 2002	0.471371

BDRK-Q-1 (163 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	0.00006
April 2003	ND
June 2003	ND

BDRK-O-1 (153 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

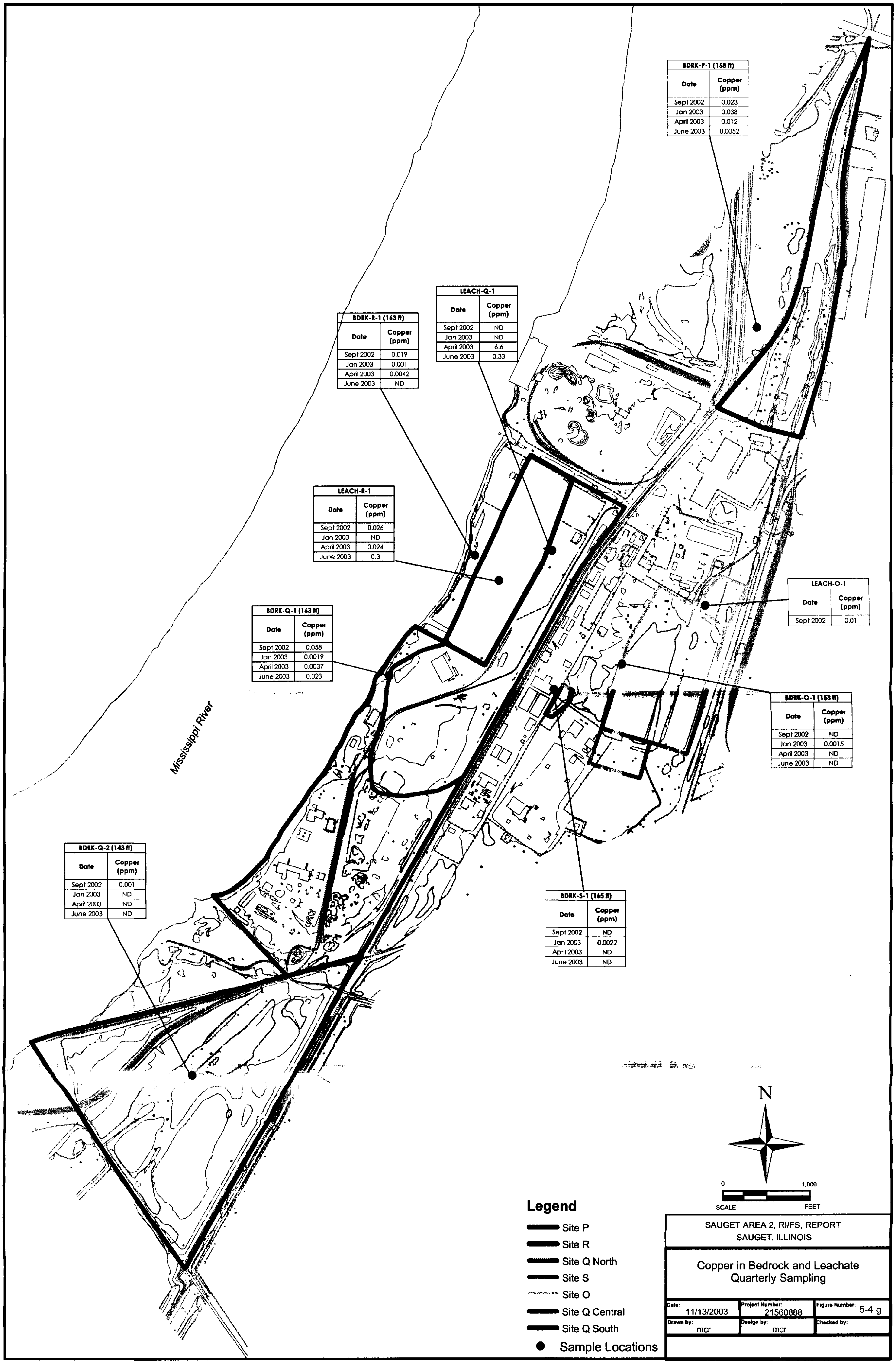
BDRK-Q-2 (143 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-S-1 (165 ft)	
Date	Total Dioxin TEQs (ppb)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 f
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)

Date	Copper (ppm)
Sept 2002	0.023
Jan 2003	0.038
April 2003	0.012
June 2003	0.0052

LEACH-Q-1

Date	Copper (ppm)
Sept 2002	ND
Jan 2003	ND
April 2003	6.6
June 2003	0.33

BDRK-R-1 (163 ft)

Date	Copper (ppm)
Sept 2002	0.019
Jan 2003	0.001
April 2003	0.0042
June 2003	ND

LEACH-R-1

Date	Copper (ppm)
Sept 2002	0.026
Jan 2003	ND
April 2003	0.024
June 2003	0.3

LEACH-O-1

Date	Copper (ppm)
Sept 2002	0.01

BDRK-Q-1 (163 ft)

Date	Copper (ppm)
Sept 2002	0.058
Jan 2003	0.0019
April 2003	0.0037
June 2003	0.023

BDRK-O-1 (153 ft)

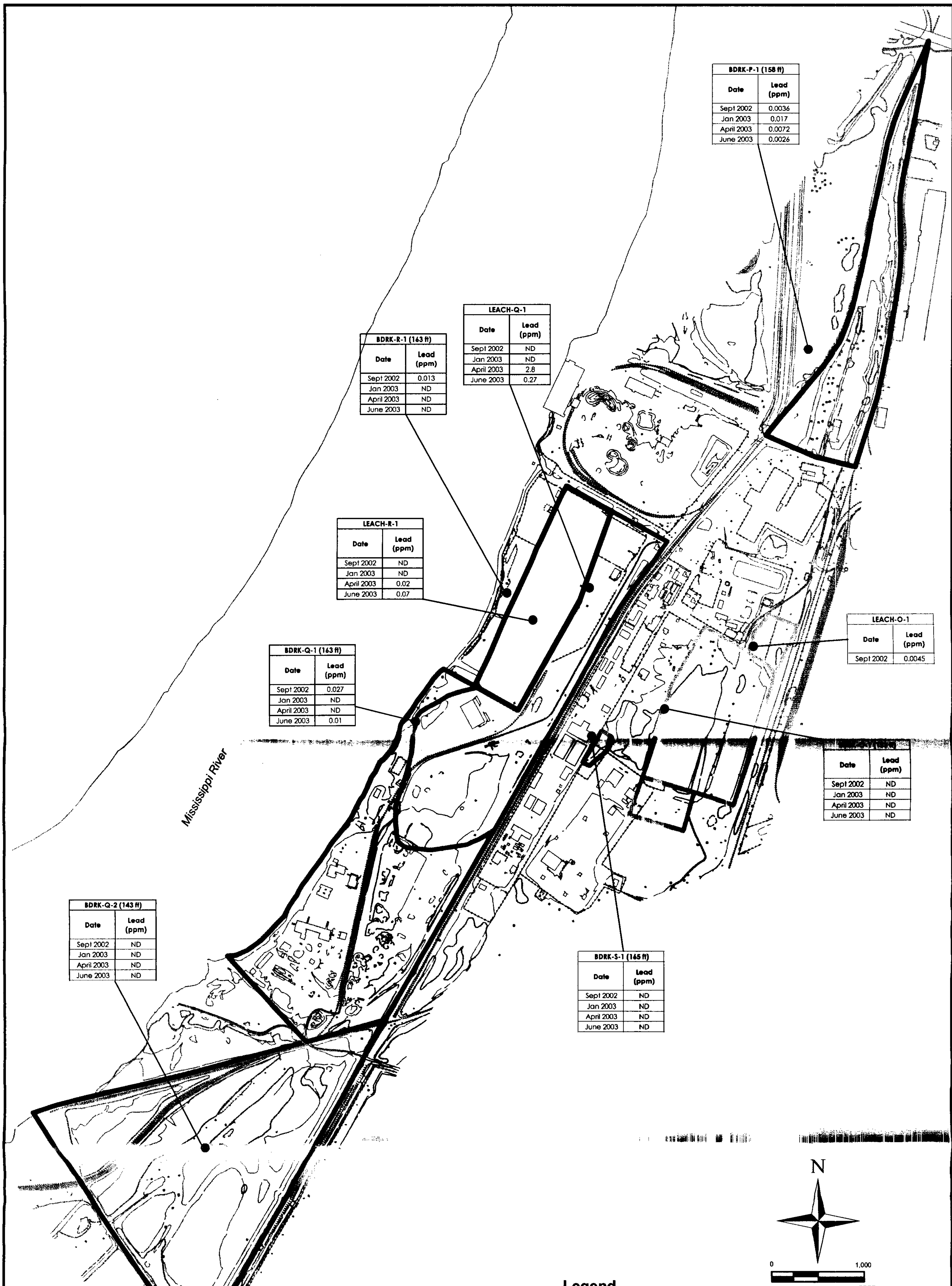
Date	Copper (ppm)
Sept 2002	ND
Jan 2003	0.0015
April 2003	ND
June 2003	ND

BDRK-Q-2 (143 ft)

Date	Copper (ppm)
Sept 2002	0.001
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-S-1 (165 ft)

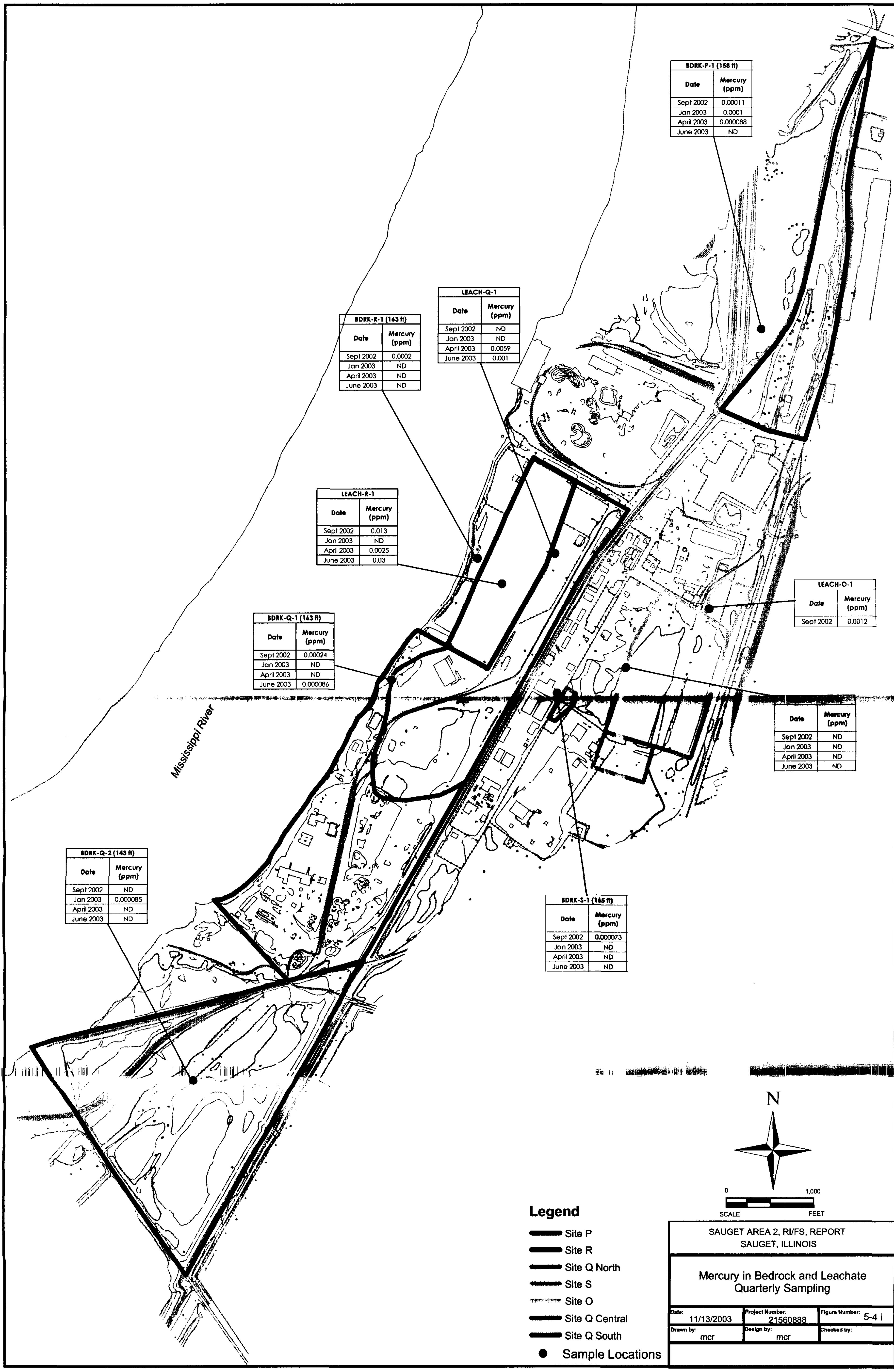
Date	Copper (ppm)
Sept 2002	ND
Jan 2003	0.0022
April 2003	ND
June 2003	ND



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Lead in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 h
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)

Date	Mercury (ppm)
Sept 2002	0.00011
Jan 2003	0.0001
April 2003	0.000088
June 2003	ND

LEACH-Q-1

Date	Mercury (ppm)
Sept 2002	ND
Jan 2003	ND
April 2003	0.0059
June 2003	0.001

BDRK-R-1 (163 ft)

Date	Mercury (ppm)
Sept 2002	0.0002
Jan 2003	ND
April 2003	ND
June 2003	ND

LEACH-R-1

Date	Mercury (ppm)
Sept 2002	0.013
Jan 2003	ND
April 2003	0.0025
June 2003	0.03

LEACH-O-1

Date	Mercury (ppm)
Sept 2002	0.0012

BDRK-Q-1 (163 ft)

Date	Mercury (ppm)
Sept 2002	0.00024
Jan 2003	ND
April 2003	ND
June 2003	0.000086

Date	Mercury (ppm)
Sept 2002	ND
Jan 2003	ND
April 2003	ND
June 2003	ND

BDRK-Q-2 (143 ft)

Date	Mercury (ppm)
Sept 2002	ND
Jan 2003	0.000085
April 2003	ND
June 2003	ND

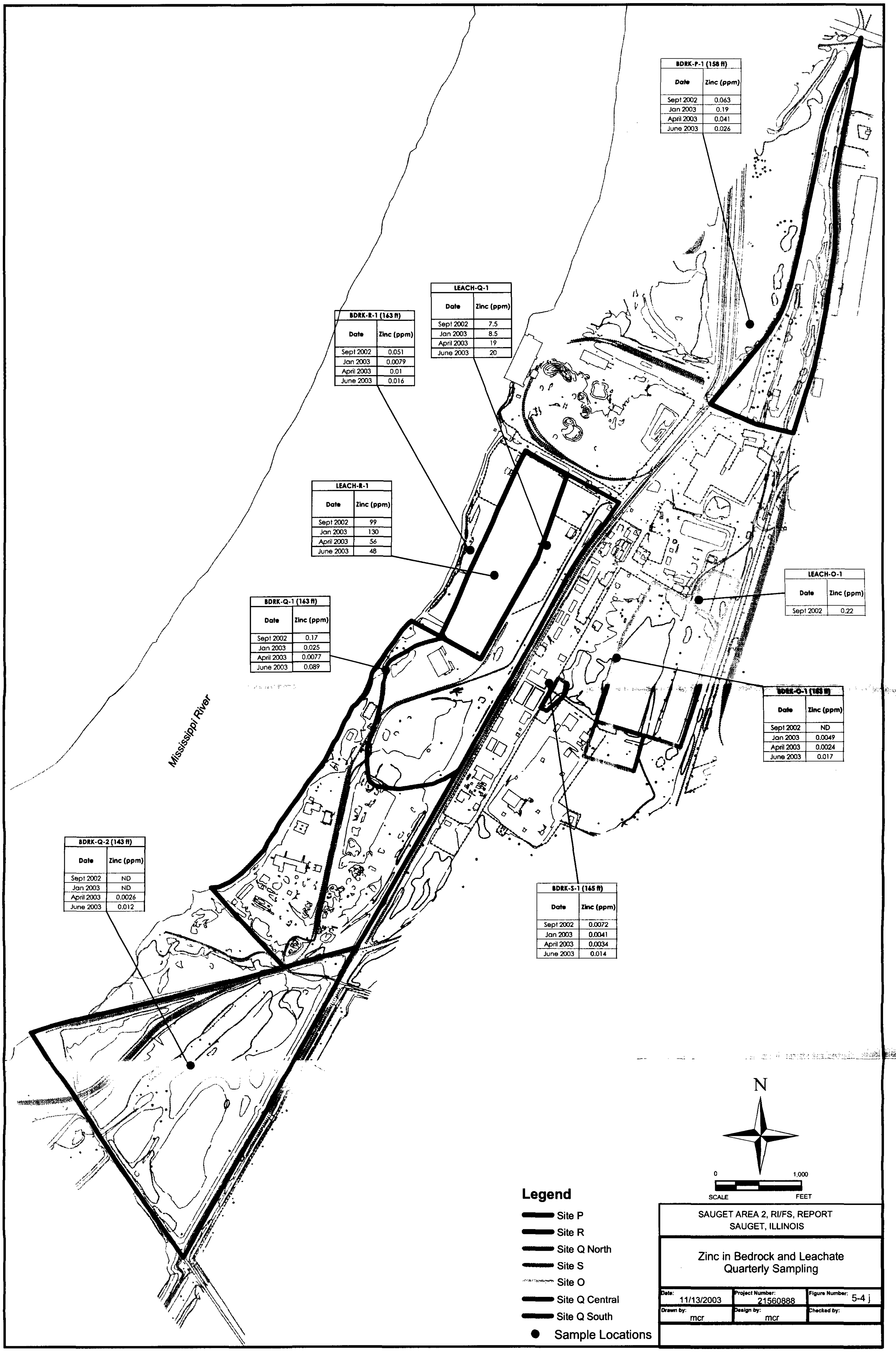
BDRK-S-1 (165 ft)

Date	Mercury (ppm)
Sept 2002	0.000073
Jan 2003	ND
April 2003	ND
June 2003	ND

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Mercury in Bedrock and Leachate Quarterly Sampling

Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 i
Drawn by: mcr	Design by: mcr	Checked by:



BDRK-P-1 (158 ft)	
Date	Zinc (ppm)
Sept 2002	0.063
Jan 2003	0.19
April 2003	0.041
June 2003	0.026

LEACH-Q-1	
Date	Zinc (ppm)
Sept 2002	7.5
Jan 2003	8.5
April 2003	19
June 2003	20

BDRK-R-1 (163 ft)	
Date	Zinc (ppm)
Sept 2002	0.051
Jan 2003	0.0079
April 2003	0.01
June 2003	0.016

LEACH-R-1	
Date	Zinc (ppm)
Sept 2002	99
Jan 2003	130
April 2003	56
June 2003	48

LEACH-O-1	
Date	Zinc (ppm)
Sept 2002	0.22

BDRK-Q-1 (163 ft)	
Date	Zinc (ppm)
Sept 2002	0.17
Jan 2003	0.025
April 2003	0.0077
June 2003	0.089

BDRK-O-1 ([illegible])	
Date	Zinc (ppm)
Sept 2002	ND
Jan 2003	0.0049
April 2003	0.0024
June 2003	0.017

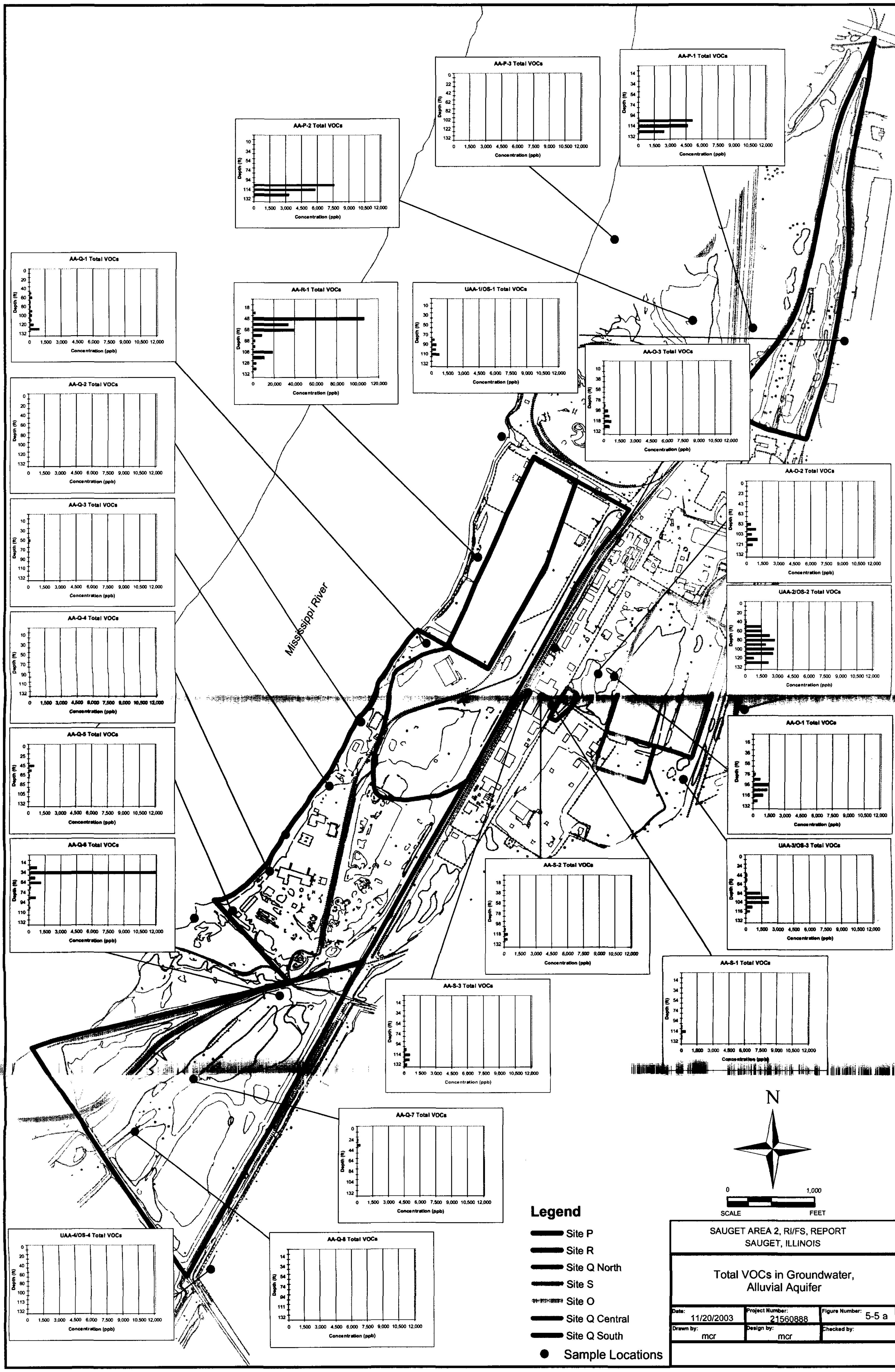
BDRK-Q-2 (143 ft)	
Date	Zinc (ppm)
Sept 2002	ND
Jan 2003	ND
April 2003	0.0026
June 2003	0.012

BDRK-S-1 (165 ft)	
Date	Zinc (ppm)
Sept 2002	0.0072
Jan 2003	0.0041
April 2003	0.0034
June 2003	0.014

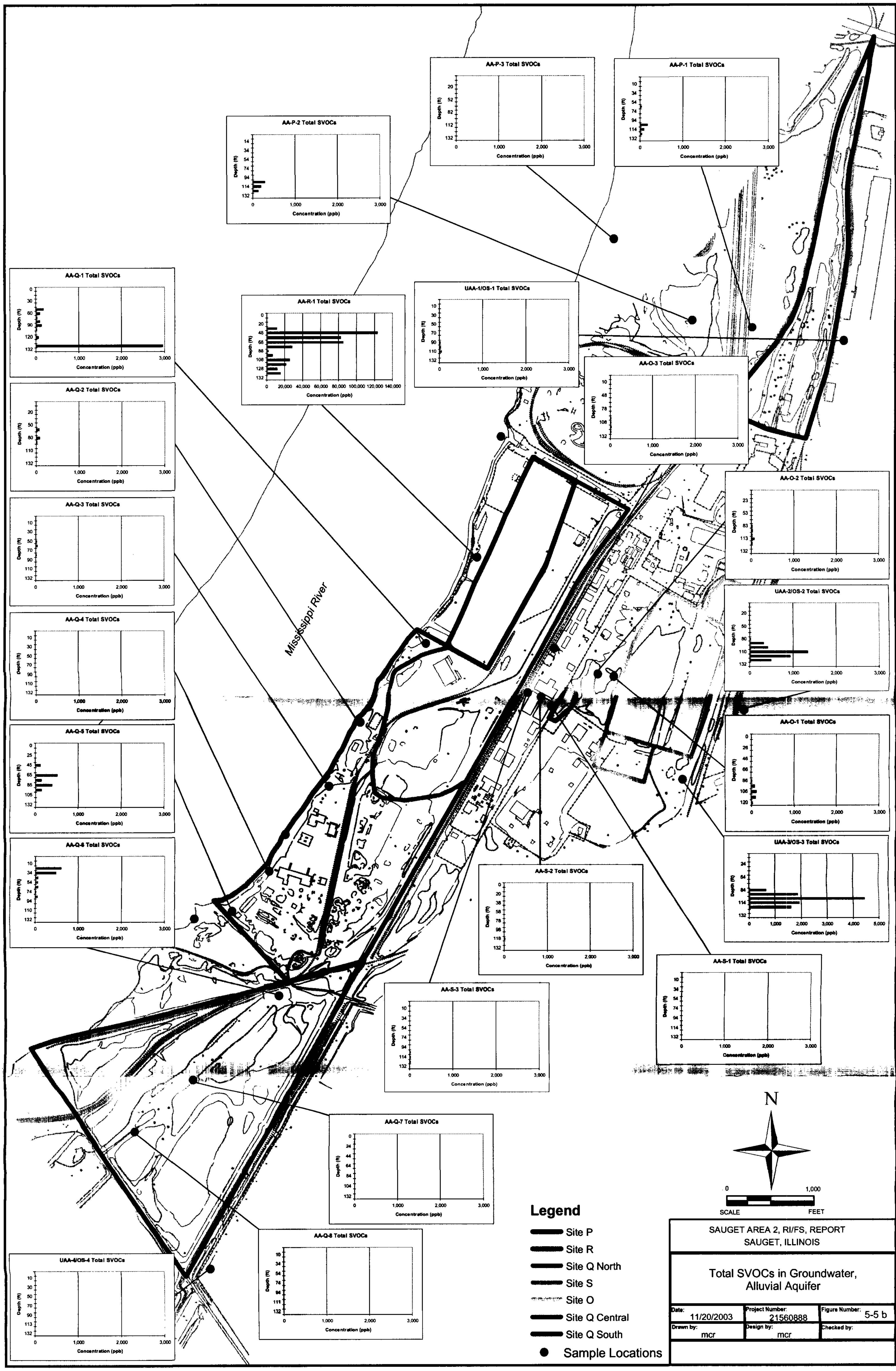
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Zinc in Bedrock and Leachate
Quarterly Sampling

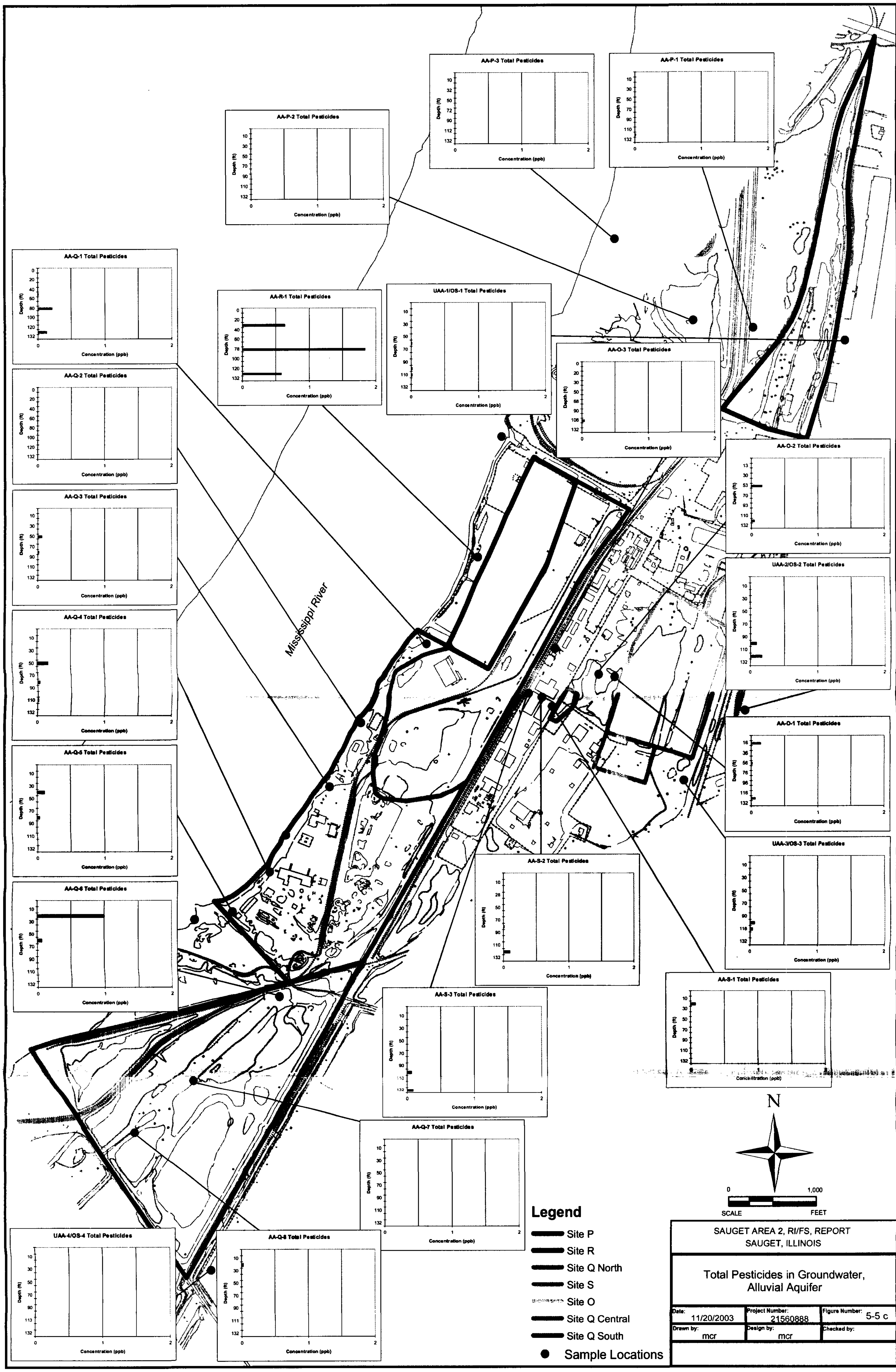
Date: 11/13/2003	Project Number: 21560888	Figure Number: 5-4 j
Drawn by: mcr	Design by: mcr	Checked by:

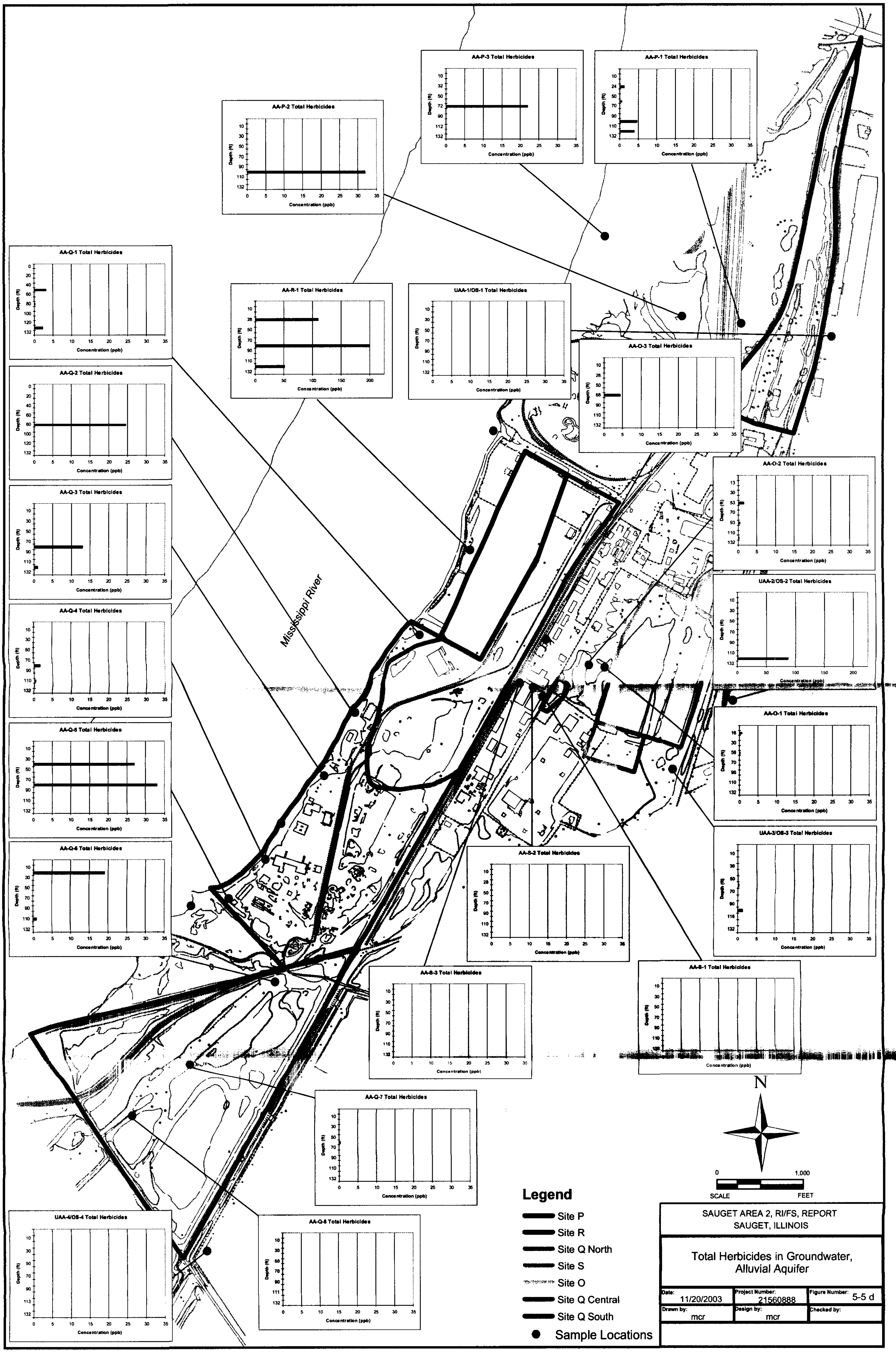


AA-P-3 Total VOCs
AA-P-1 Total VOCs
AA-P-2 Total VOCs
AA-Q-1 Total VOCs
AA-R-1 Total VOCs
UAA-1/OS-1 Total VOCs
AA-O-3 Total VOCs
AA-Q-2 Total VOCs
AA-O-2 Total VOCs
AA-Q-3 Total VOCs
UAA-2/OS-2 Total VOCs
AA-Q-4 Total VOCs
AA-O-1 Total VOCs
AA-Q-5 Total VOCs
AA-Q-6 Total VOCs
UAA-3/OS-3 Total VOCs
AA-S-2 Total VOCs
AA-S-1 Total VOCs
AA-S-3 Total VOCs
AA-Q-7 Total VOCs
UAA-4/OS-4 Total VOCs
AA-Q-8 Total VOCs
Depth (ft)
Concentration (ppb)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Groundwater, Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 a
Drawn by: mcr
Design by: mcr
Checked by:



AA-P-3 Total SVOCs
AA-P-1 Total SVOCs
AA-P-2 Total SVOCs
AA-Q-1 Total SVOCs
AA-R-1 Total SVOCs
UAA-1/OS-1 Total SVOCs
AA-O-3 Total SVOCs
AA-Q-2 Total SVOCs
AA-O-2 Total SVOCs
AA-Q-3 Total SVOCs
UAA-2/OS-2 Total SVOCs
AA-Q-4 Total SVOCs
AA-O-1 Total SVOCs
AA-Q-5 Total SVOCs
AA-Q-6 Total SVOCs
UAA-3/OS-3 Total SVOCs
AA-S-2 Total SVOCs
AA-S-1 Total SVOCs
AA-S-3 Total SVOCs
AA-Q-7 Total SVOCs
AA-Q-8 Total SVOCs
UAA-4/OS-4 Total SVOCs
Depth (ft)
Concentration (ppb)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Groundwater, Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 b
Drawn by: mcr
Design by: mcr
Checked by:


AA-P-3 Total Pesticides
AA-P-1 Total Pesticides
AA-P-2 Total Pesticides
AA-Q-1 Total Pesticides
AA-R-1 Total Pesticides
UAA-1/OS-1 Total Pesticides
AA-O-3 Total Pesticides
AA-Q-2 Total Pesticides
AA-O-2 Total Pesticides
AA-Q-3 Total Pesticides
UAA-2/OS-2 Total Pesticides
AA-Q-4 Total Pesticides
AA-O-1 Total Pesticides
AA-Q-5 Total Pesticides
UAA-3/OS-3 Total Pesticides
AA-S-2 Total Pesticides
AA-Q-6 Total Pesticides
AA-S-1 Total Pesticides
AA-S-3 Total Pesticides
AA-Q-7 Total Pesticides
UAA-4/OS-4 Total Pesticides
AA-Q-8 Total Pesticides
Depth (ft)
Concentration (ppb)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Groundwater, Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 c
Drawn by: mcr
Design by: mcr
Checked by:



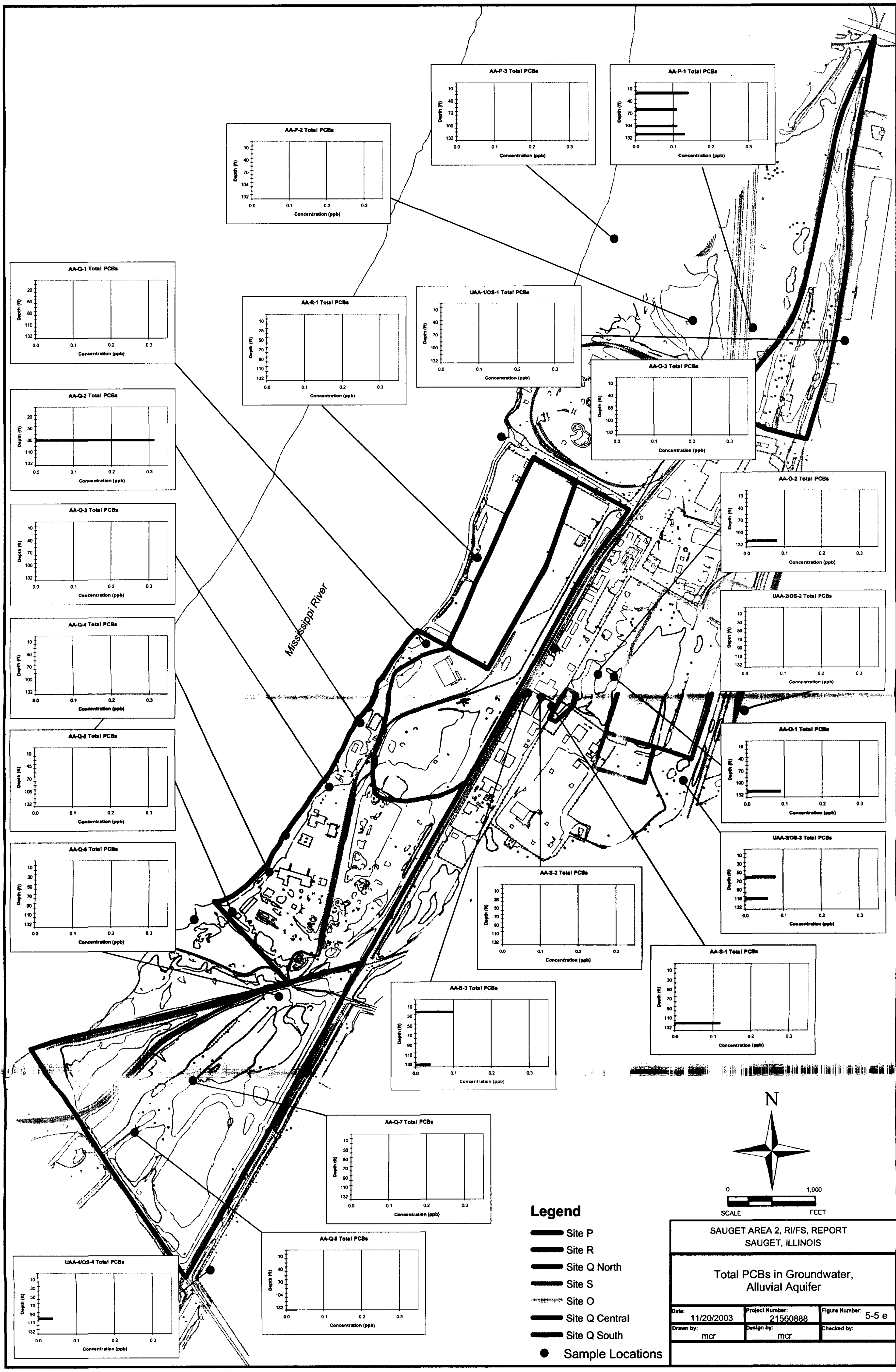
Legend

- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South
- ● Sample Locations

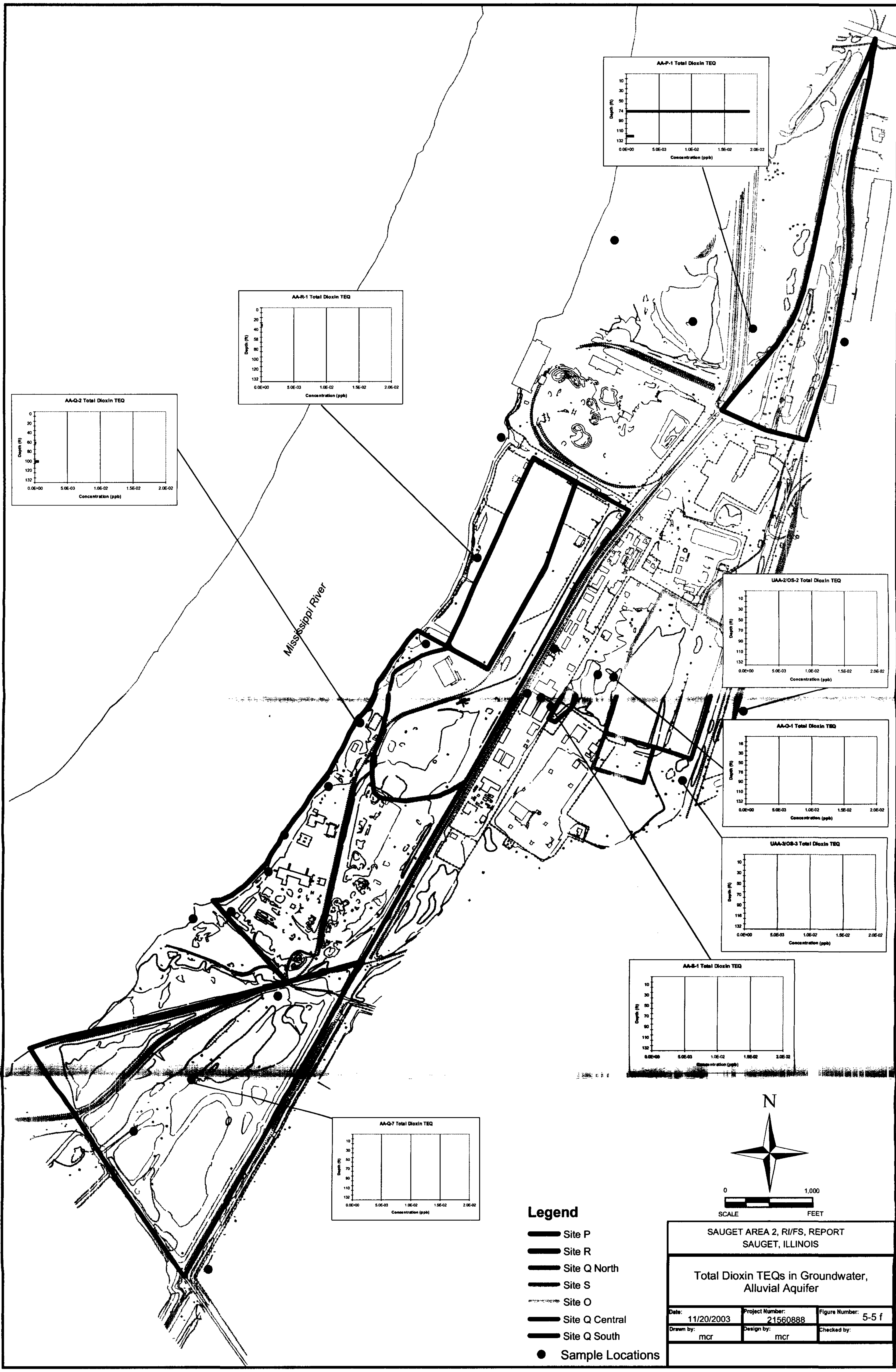
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

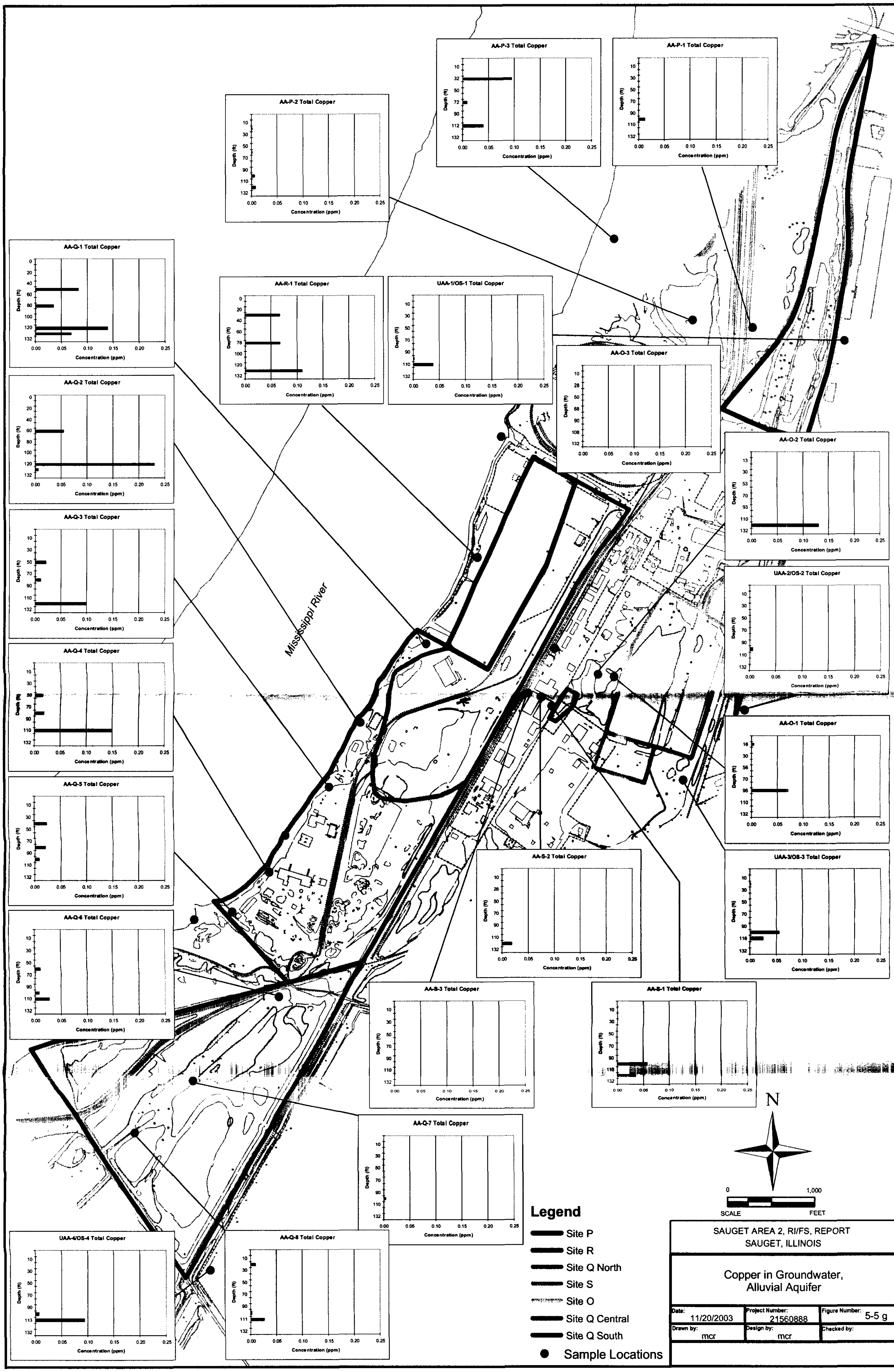
Total Herbicides in Groundwater, Alluvial Aquifer

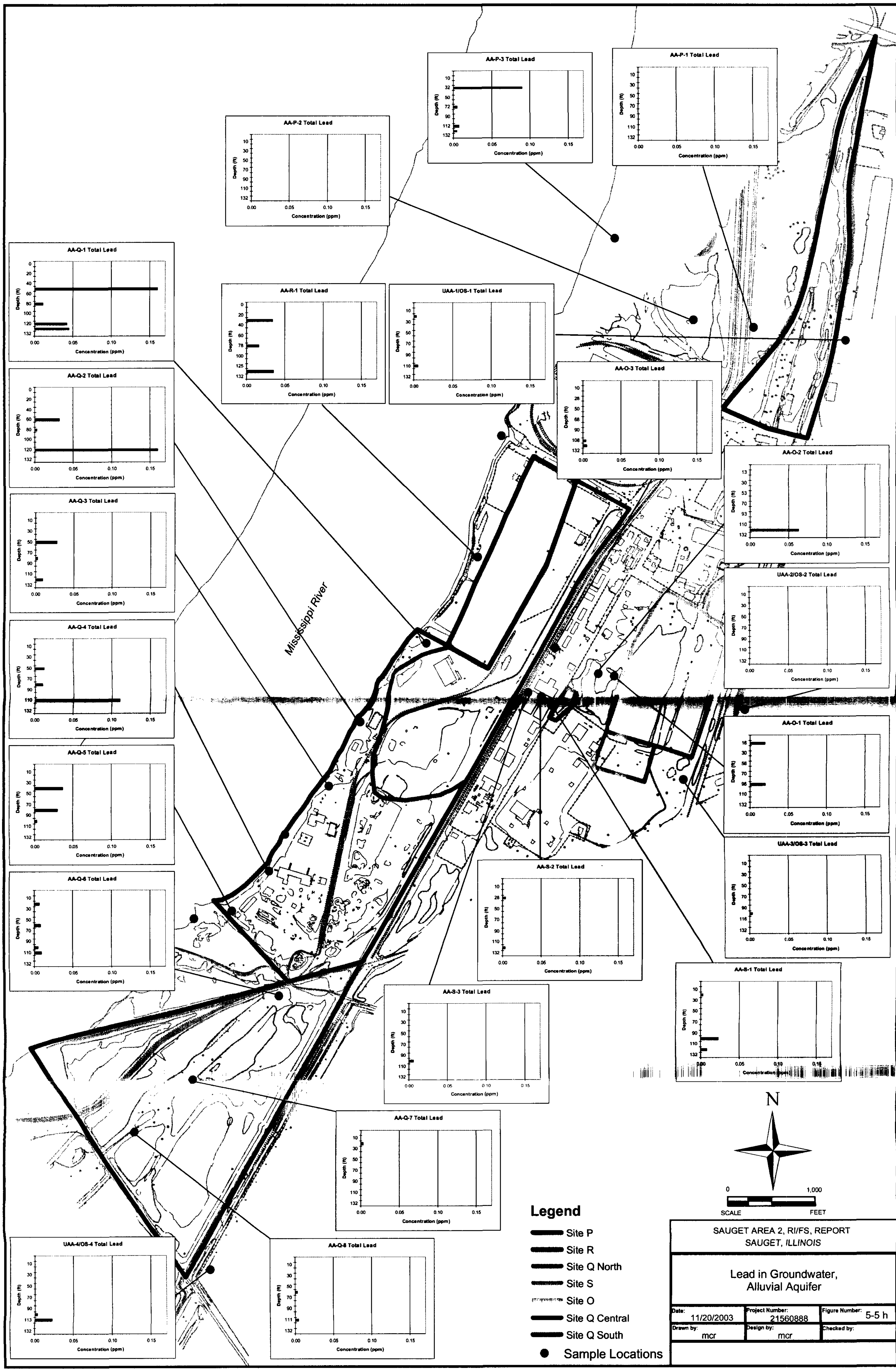
Date: 11/20/2003	Project Number: 21560888	Figure Number: 5-5 d
Drawn by: mcr	Design by: mcr	Checked by:

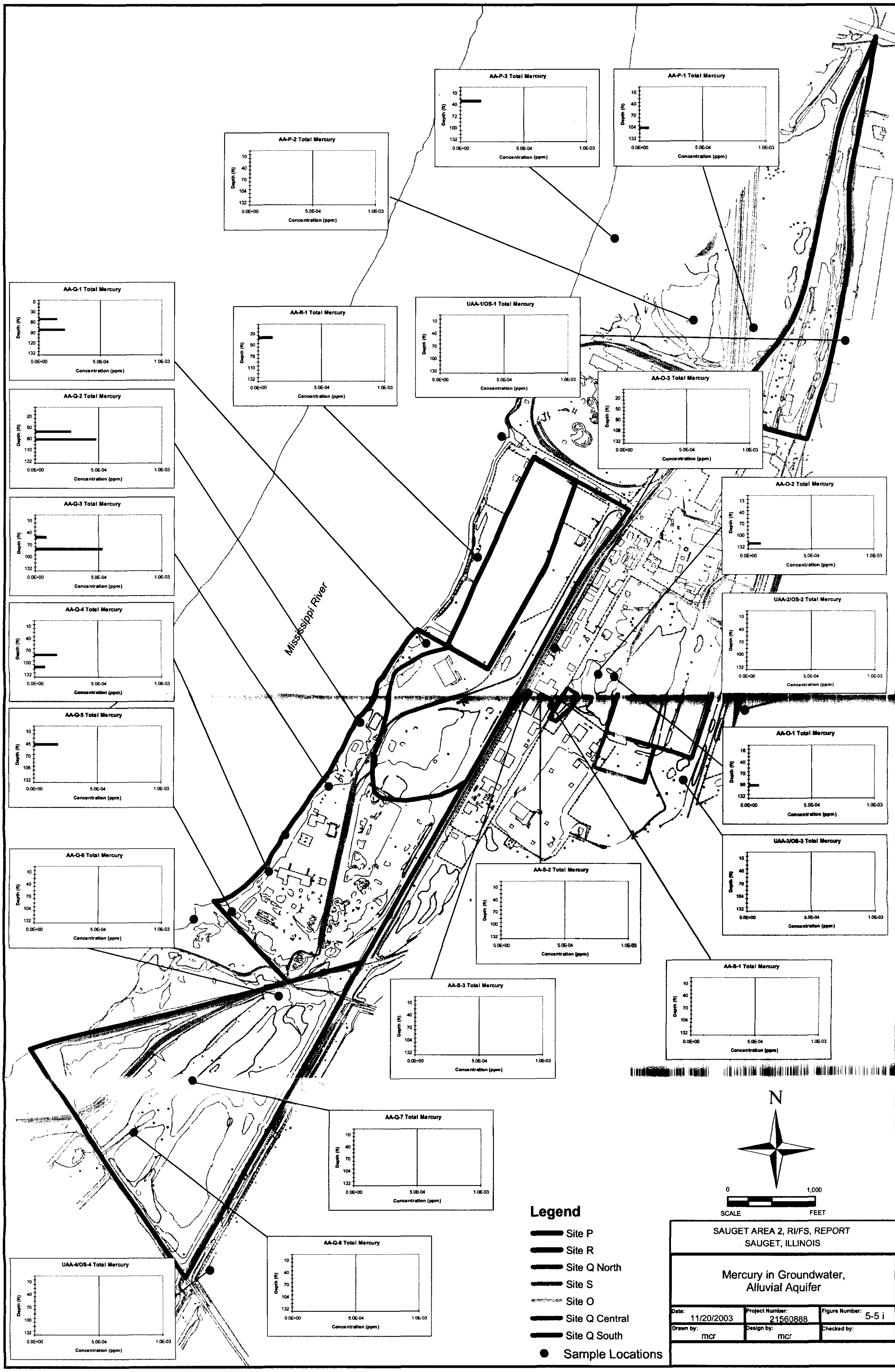


AA-P-3 Total PCBs
AA-P-1 Total PCBs
AA-P-2 Total PCBs
AA-Q-1 Total PCBs
AA-R-1 Total PCBs
UAA-1/OS-1 Total PCBs
AA-O-3 Total PCBs
AA-Q-2 Total PCBs
AA-O-2 Total PCBs
AA-Q-3 Total PCBs
UAA-2/OS-2 Total PCBs
AA-Q-4 Total PCBs
AA-O-1 Total PCBs
AA-Q-5 Total PCBs
UAA-3/OS-3 Total PCBs
AA-Q-6 Total PCBs
AA-S-2 Total PCBs
AA-S-1 Total PCBs
AA-S-3 Total PCBs
AA-Q-7 Total PCBs
AA-Q-8 Total PCBs
UAA-4/OS-4 Total PCBs
Depth (ft)
Concentration (ppb)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Groundwater, Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 e
Drawn by: mcr
Design by: mcr
Checked by:

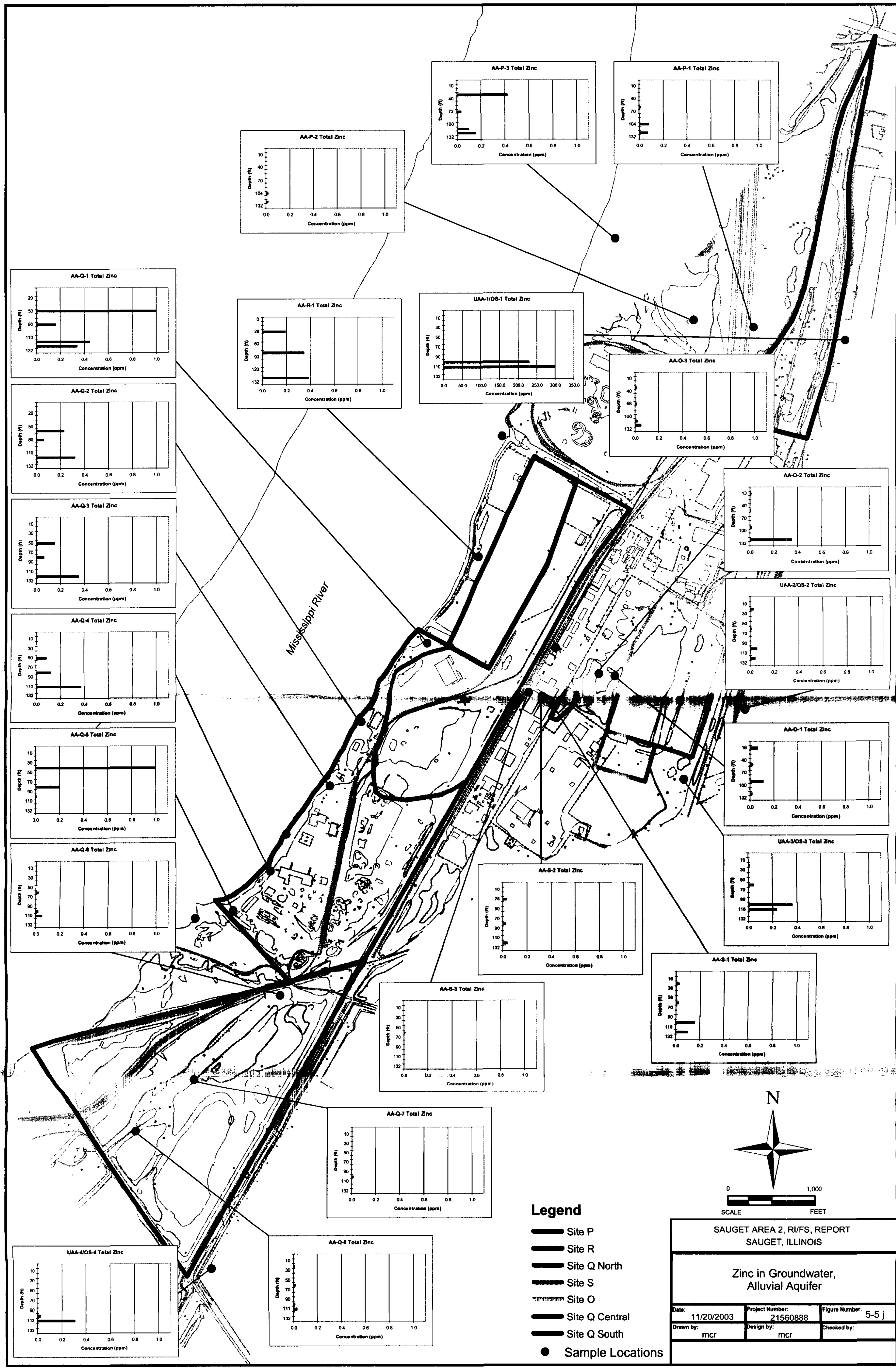

AA-P-1 Total Dioxin TEQ
AA-R-1 Total Dioxin TEQ
AA-Q-2 Total Dioxin TEQ
UAA-2/OS-2 Total Dioxin TEQ
AA-O-1 Total Dioxin TEQ
UAA-3/OS-3 Total Dioxin TEQ
AA-S-1 Total Dioxin TEQ
AA-Q-7 Total Dioxin TEQ
Depth (ft)
Concentration (ppb)
0.0E+00
5.0E-03
1.0E-02
1.5E-02
2.0E-02
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Groundwater, Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 f
Drawn by: mcr
Design by: mcr
Checked by:

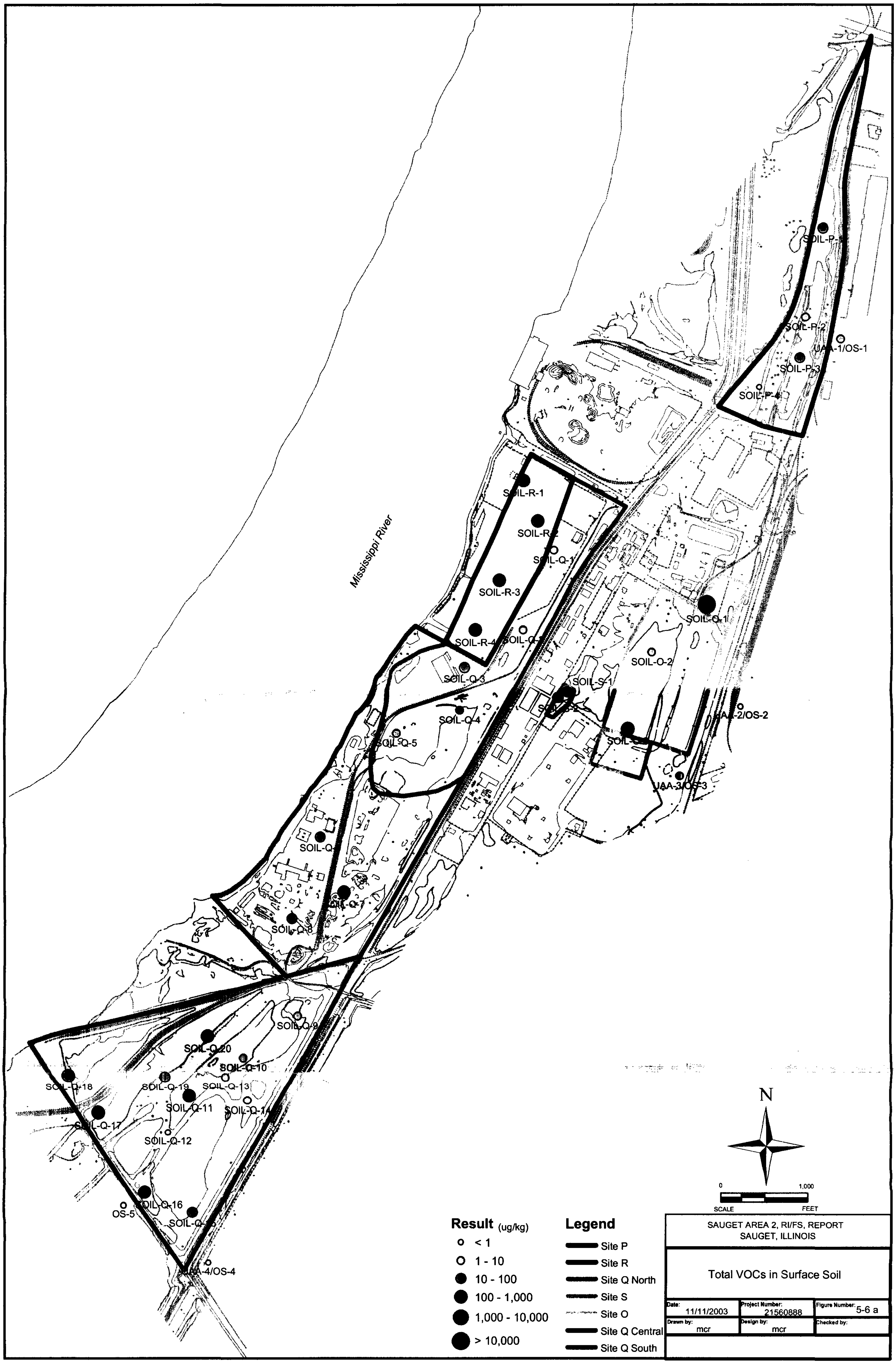

AA-P-3 Total Copper
AA-P-1 Total Copper
AA-P-2 Total Copper
AA-Q-1 Total Copper
AA-R-1 Total Copper
UAA-1/OS-1 Total Copper
AA-O-3 Total Copper
AA-Q-2 Total Copper
AA-O-2 Total Copper
AA-Q-3 Total Copper
UAA-2/OS-2 Total Copper
AA-Q-4 Total Copper
AA-O-1 Total Copper
AA-Q-5 Total Copper
AA-S-2 Total Copper
UAA-3/OS-3 Total Copper
AA-Q-6 Total Copper
AA-S-3 Total Copper
AA-S-1 Total Copper
AA-Q-7 Total Copper
UAA-4/OS-4 Total Copper
AA-Q-8 Total Copper
Depth (ft)
Concentration (ppm)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Groundwater,
Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 g
Drawn by: mcr
Design by: mcr
Checked by:

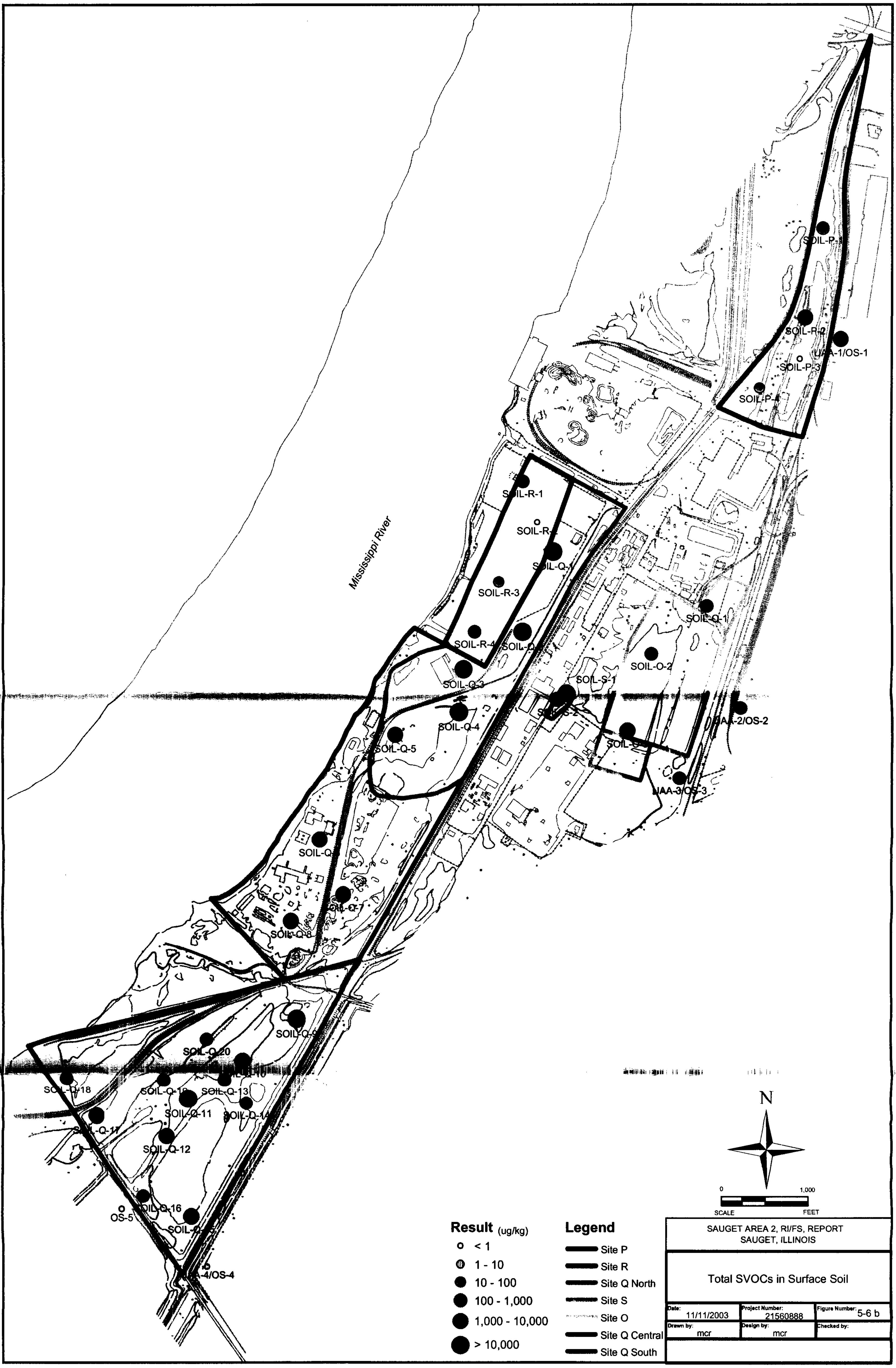

AA-P-3 Total Lead
AA-P-1 Total Lead
AA-P-2 Total Lead
AA-Q-1 Total Lead
AA-R-1 Total Lead
UAA-1/OS-1 Total Lead
AA-O-3 Total Lead
AA-Q-2 Total Lead
AA-O-2 Total Lead
AA-Q-3 Total Lead
UAA-2/OS-2 Total Lead
AA-Q-4 Total Lead
AA-O-1 Total Lead
AA-Q-5 Total Lead
UAA-3/OS-3 Total Lead
AA-Q-6 Total Lead
AA-S-2 Total Lead
AA-S-1 Total Lead
AA-S-3 Total Lead
AA-Q-7 Total Lead
UAA-4/OS-4 Total Lead
AA-Q-8 Total Lead
Depth (ft)
Concentration (ppm)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Groundwater,
Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 h
Drawn by: mcr
Design by: mcr
Checked by:



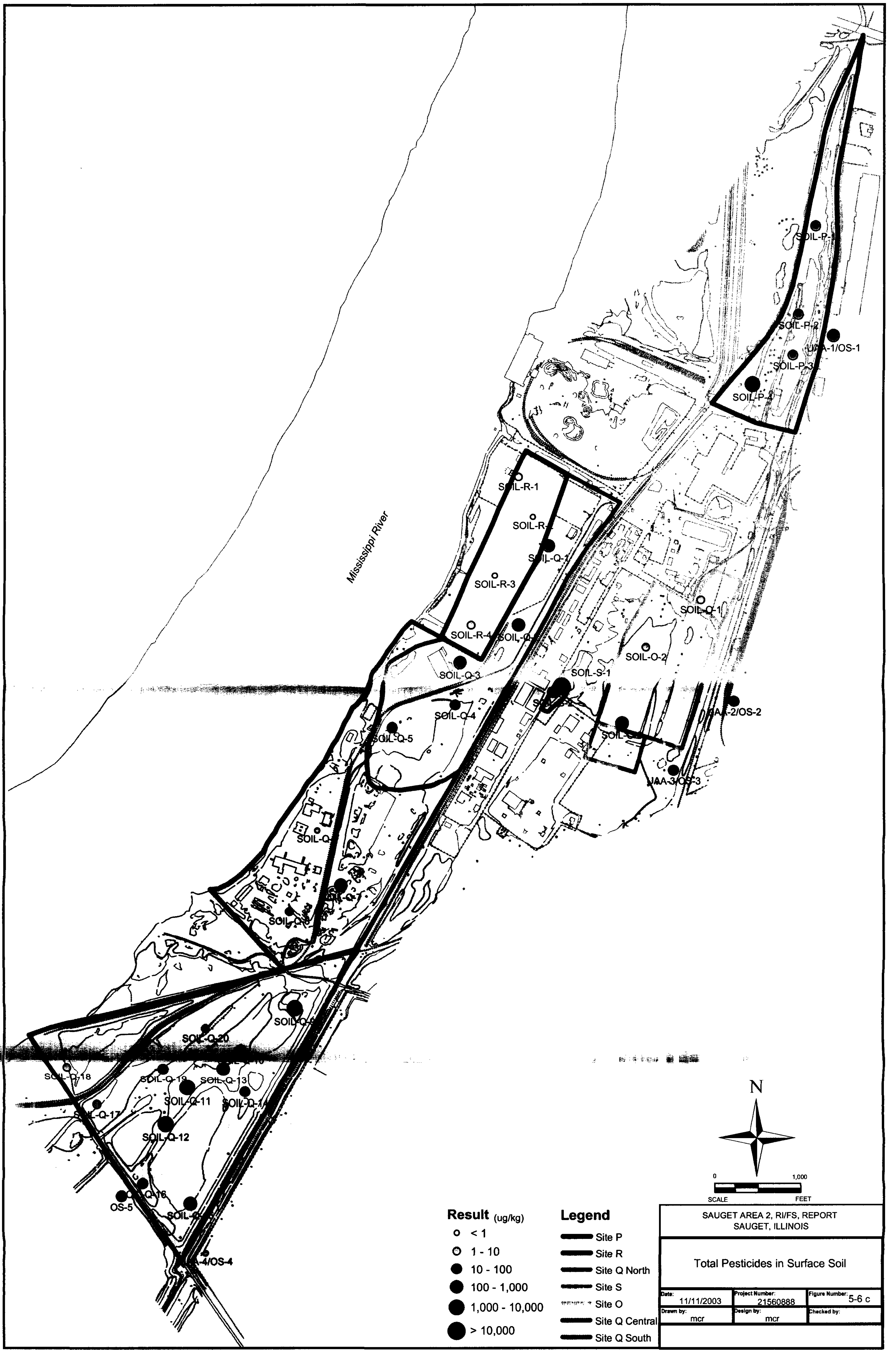
AA-P-3 Total Mercury
AA-P-1 Total Mercury
AA-P-2 Total Mercury
AA-Q-1 Total Mercury
AA-R-1 Total Mercury
UAA-1/OS-1 Total Mercury
AA-O-3 Total Mercury
AA-Q-2 Total Mercury
AA-O-2 Total Mercury
AA-Q-3 Total Mercury
AA-Q-4 Total Mercury
UAA-2/OS-2 Total Mercury
AA-Q-5 Total Mercury
AA-O-1 Total Mercury
UAA-3/OS-3 Total Mercury
AA-Q-6 Total Mercury
AA-S-2 Total Mercury
AA-S-1 Total Mercury
AA-S-3 Total Mercury
AA-Q-7 Total Mercury
AA-Q-8 Total Mercury
UAA-4/OS-4 Total Mercury
Depth (ft)
Concentration (ppm)
0.0E+00
5.0E-04
1.0E-03
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Groundwater,
Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 i
Drawn by: mcr
Design by: mcr
Checked by:


AA-P-3 Total Zinc
AA-P-1 Total Zinc
AA-P-2 Total Zinc
AA-Q-1 Total Zinc
AA-R-1 Total Zinc
UAA-1/OS-1 Total Zinc
AA-O-3 Total Zinc
AA-Q-2 Total Zinc
AA-O-2 Total Zinc
AA-Q-3 Total Zinc
UAA-2/OS-2 Total Zinc
AA-Q-4 Total Zinc
AA-O-1 Total Zinc
AA-Q-5 Total Zinc
UAA-3/OS-3 Total Zinc
AA-Q-6 Total Zinc
AA-S-2 Total Zinc
AA-S-1 Total Zinc
AA-S-3 Total Zinc
AA-Q-7 Total Zinc
UAA-4/OS-4 Total Zinc
AA-Q-8 Total Zinc
Depth (ft)
Concentration (ppm)
Mississippi River
N
0
1,000
SCALE
FEET
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
Sample Locations
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Groundwater,
Alluvial Aquifer
Date: 11/20/2003
Project Number: 21560888
Figure Number: 5-5 j
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
SOIL-P-1
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-P-4
SOIL-R-1
SOIL-R-2
SOIL-Q-1
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-Q-3
SOIL-S-1
SOIL-Q-4
UAA-2/OS-2
SOIL-Q-5
UAA-3/OS-3
SOIL-Q-9
SOIL-Q-20
SOIL-Q-10
SOIL-Q-18
SOIL-Q-19
SOIL-Q-13
SOIL-Q-11
SOIL-Q-14
SOIL-Q-17
SOIL-Q-12
OS-5
SOIL-Q-16
UAA-4/OS-4
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Surface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-6 a
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
SOIL-P-3
UAA-1/OS-1
SOIL-R-1
SOIL-R-3
SOIL-Q-1
SOIL-O-2
SOIL-S-1
UAA-2/OS-2
SOIL-Q-4
SOIL-Q-5
SOIL-Q-8
SOIL-Q-20
SOIL-Q-18
SOIL-Q-13
SOIL-Q-11
SOIL-Q-12
SOIL-Q-16
OS-5
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Surface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-6 b
Drawn by: mcr
Design by: mcr
Checked by:

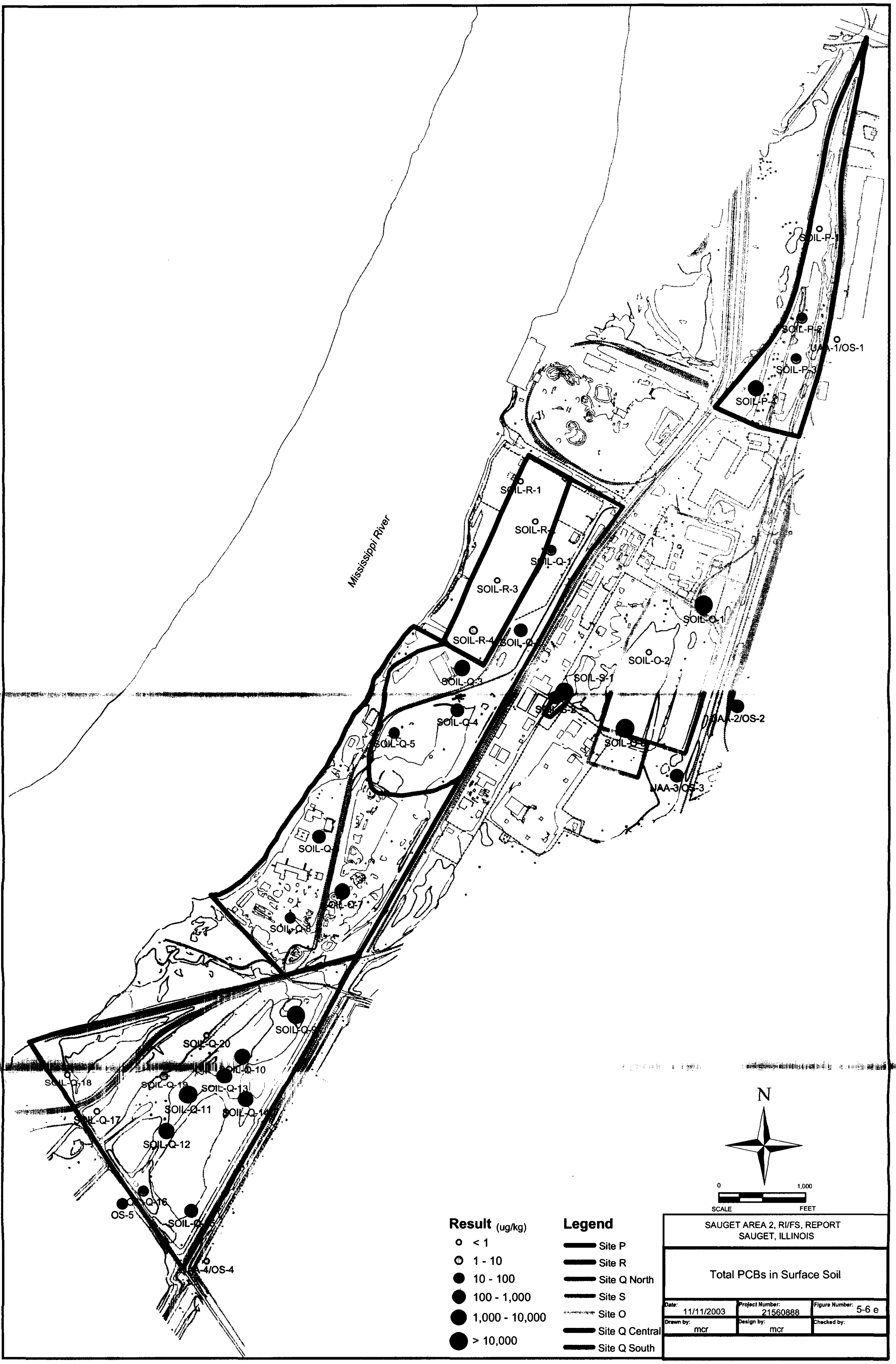


SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Pesticides in Surface Soil

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-6 c
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
SOIL-P-1
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-P-4
SOIL-R-1
SOIL-R-2
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-O-3
SOIL-S-1
UAA-2/OS-2
UAA-3/OS-3
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-Q-8
SOIL-Q-9
SOIL-Q-20
SOIL-Q-18
SOIL-Q-19
SOIL-Q-13
SOIL-Q-11
SOIL-Q-14
SOIL-Q-17
SOIL-Q-12
SOIL-Q-16
OS-5
UAA-4/OS-4
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Surface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-6 d
Drawn by: mcr
Design by: mcr
Checked by:

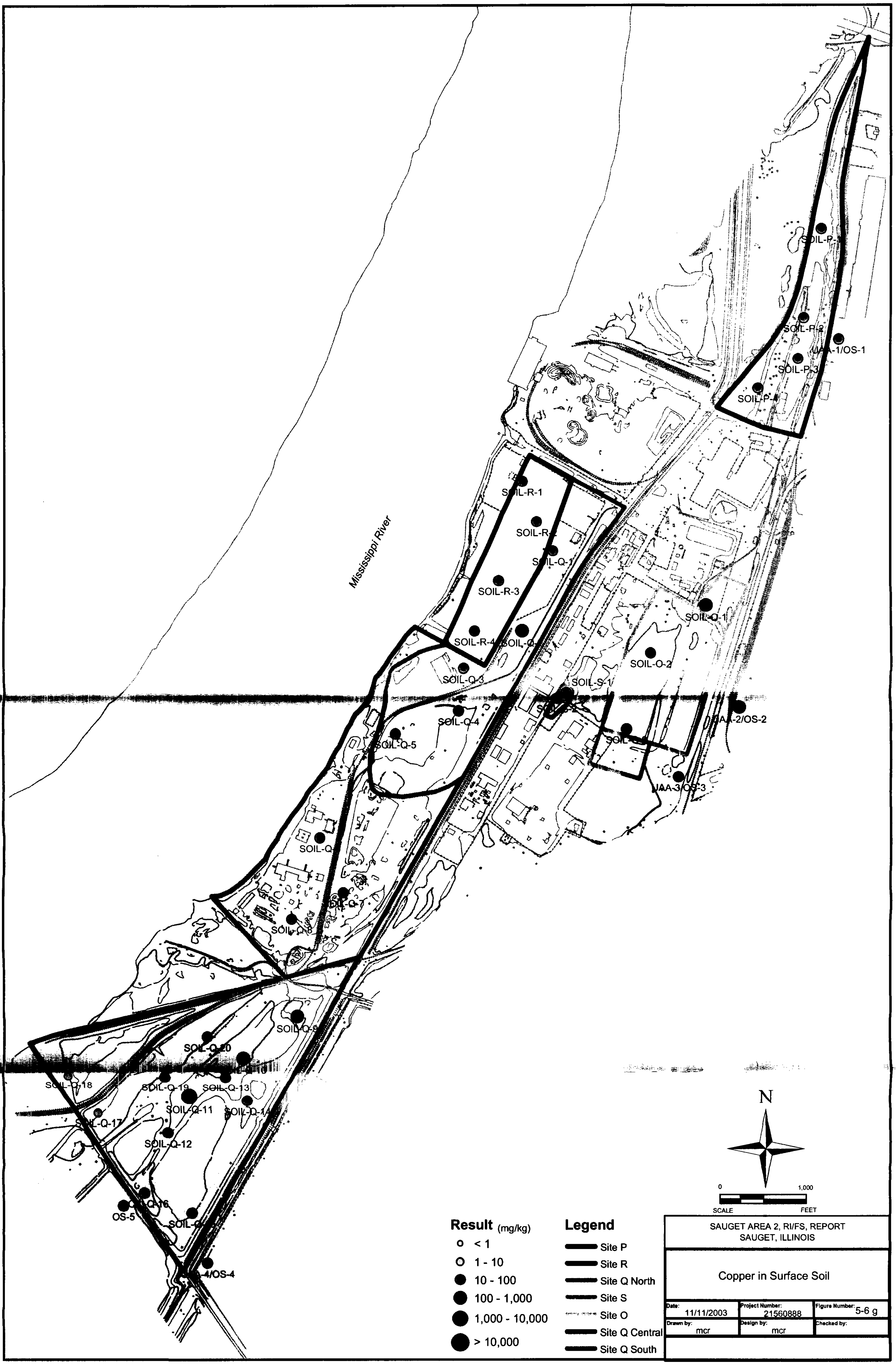


Mississippi River
SOIL-P-2
SOIL-P-3
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-S-1
AA-2/OS-2
AA-3/OS-3
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-Q-8
SOIL-Q-20
SOIL-Q-10
SOIL-Q-18
SOIL-Q-19
SOIL-Q-13
SOIL-Q-11
SOIL-Q-17
SOIL-Q-12
OS-5
4/OS-4
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Surface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-6 e
Drawn by: mcr
Design by: mcr
Checked by:

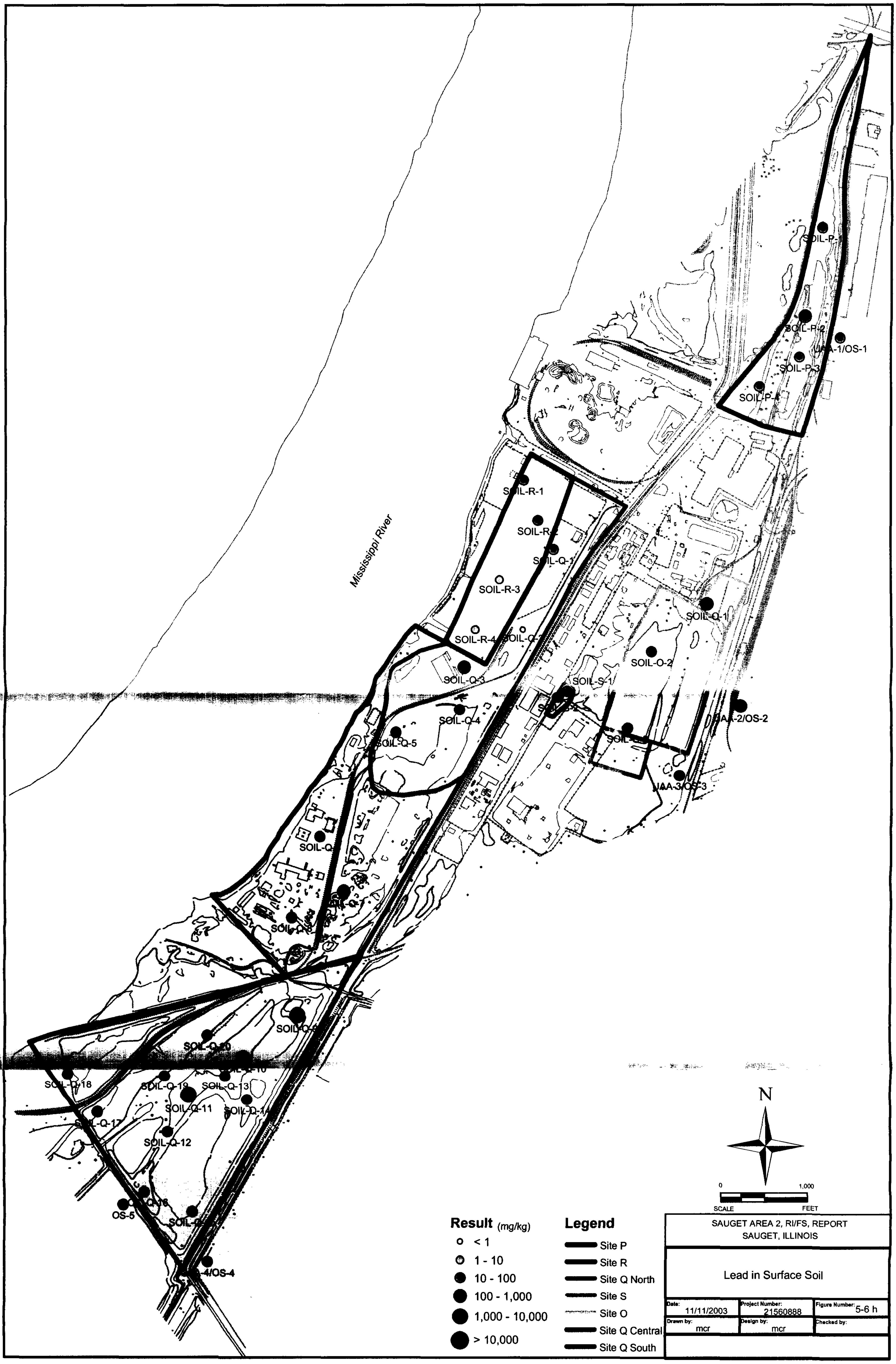
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Surface Soil

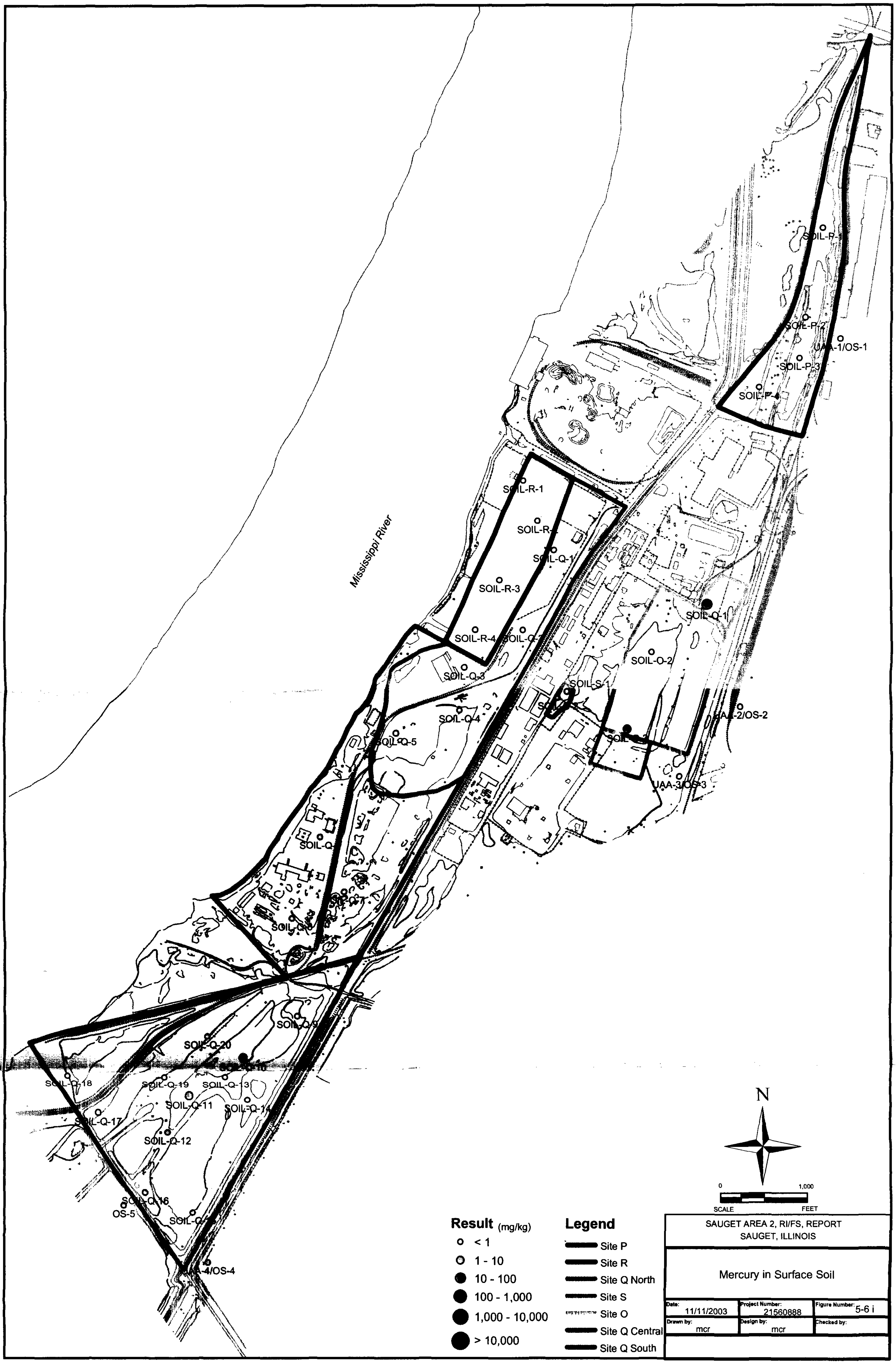
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-6 f
Drawn by: mcr	Design by: mcr	Checked by:



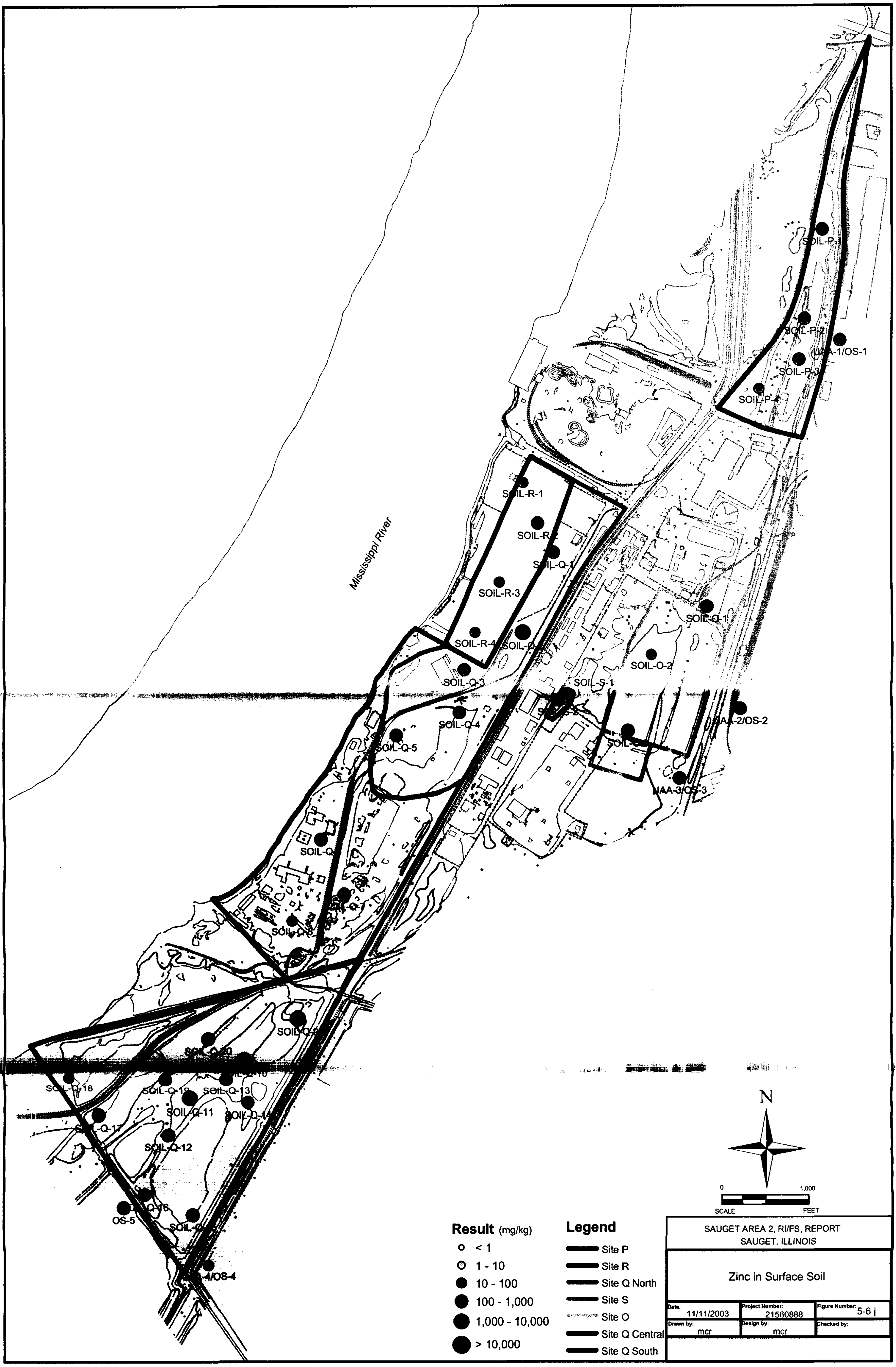
SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Copper in Surface Soil		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-6 g
Drawn by: mcr	Design by: mcr	Checked by:



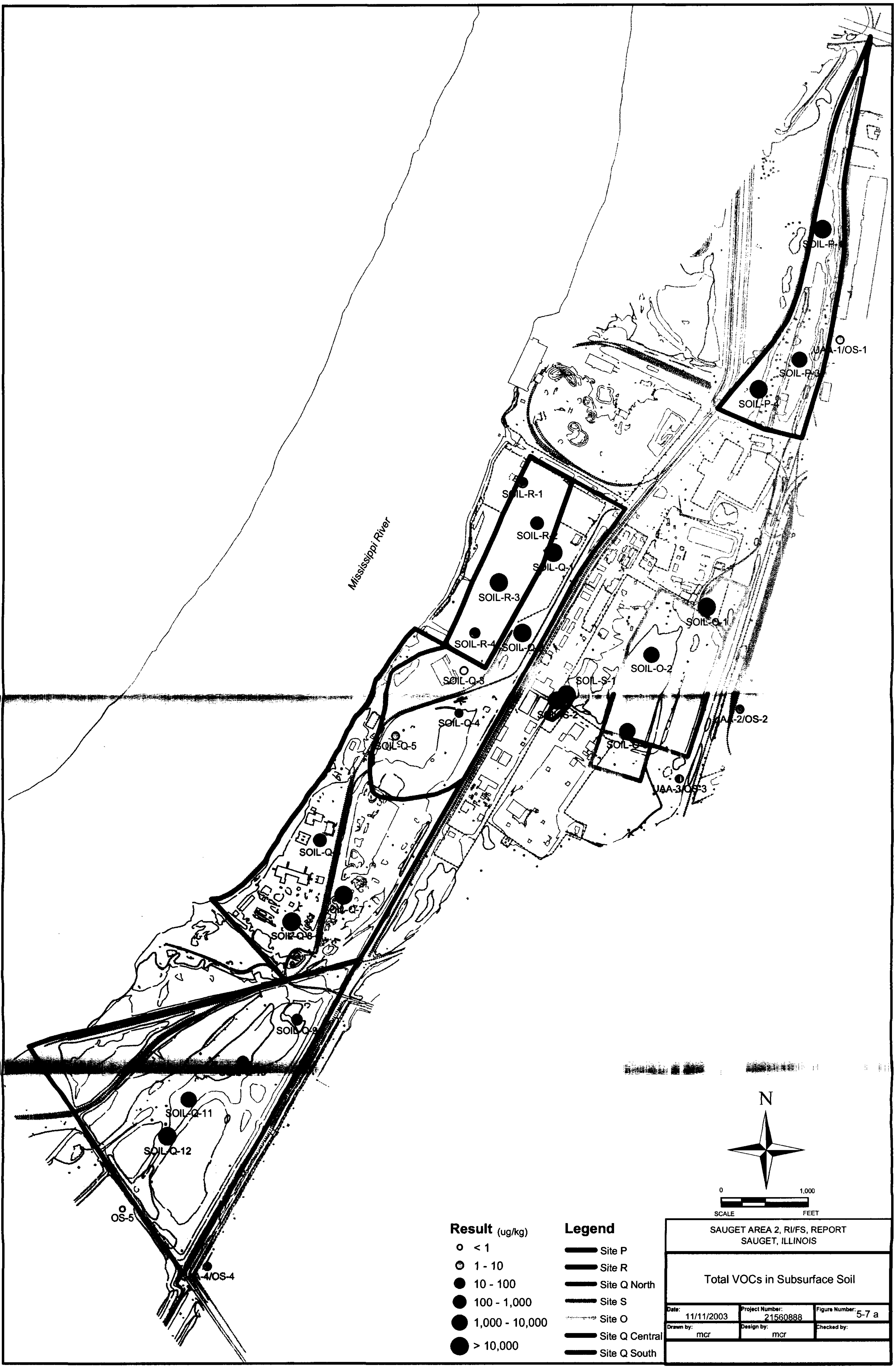
Mississippi River
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-P-3
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-O-2
SOIL-S-1
SOIL-Q-11
SOIL-Q-12
SOIL-Q-13
SOIL-Q-19
OS-5
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Surface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-6 h
Drawn by: mcr
Design by: mcr
Checked by:

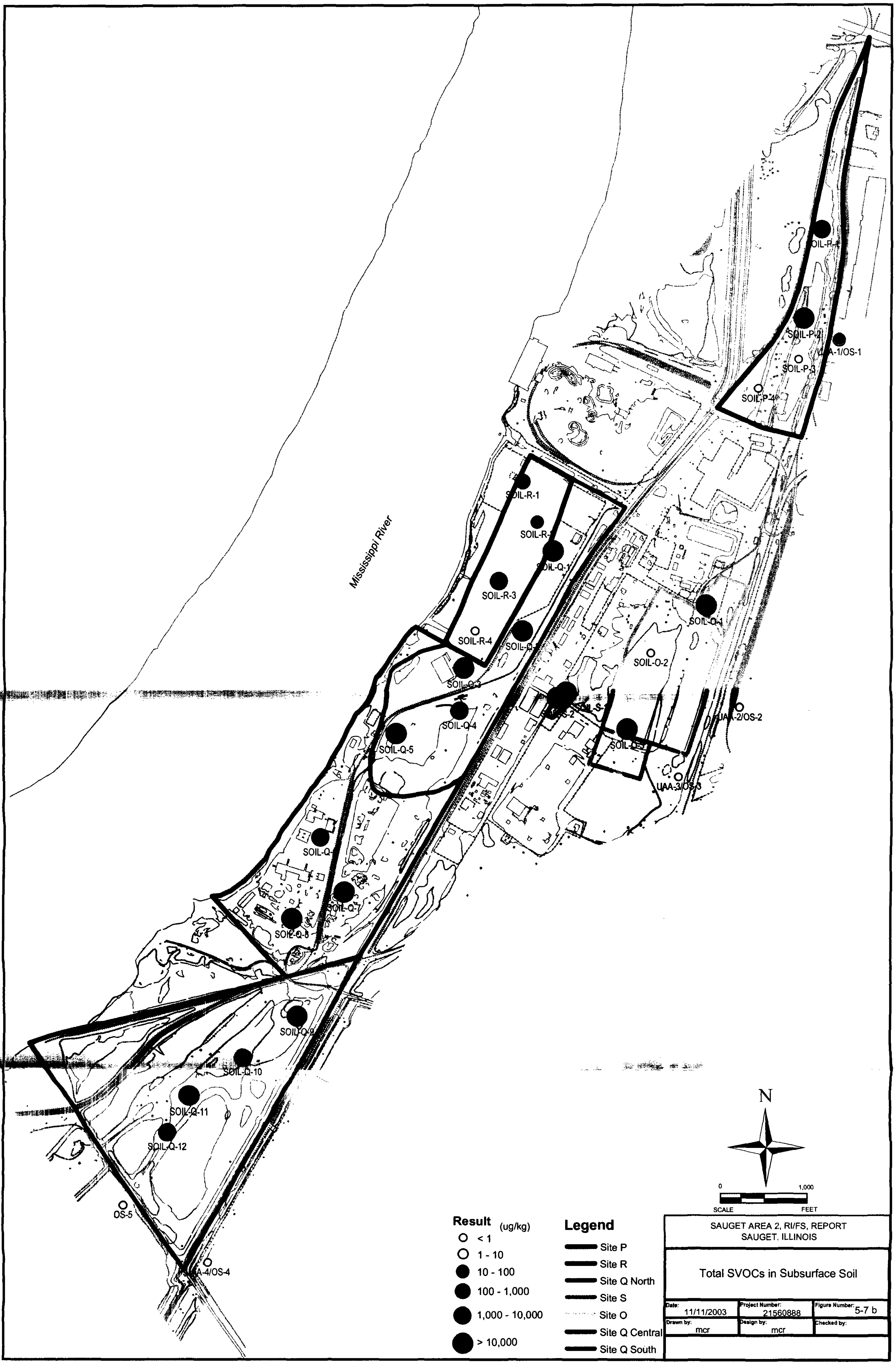


Mississippi River
SOIL-P-1
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-P-4
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-Q-1
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-O-1
SOIL-O-2
SOIL-S
UAA-2/OS-2
UAA-3/OS-3
SOIL-Q-9
SOIL-Q-20
SOIL-Q-18
SOIL-Q-19
SOIL-Q-13
SOIL-Q-11
SOIL-Q-17
SOIL-Q-12
SOIL-Q-16
OS-5
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Surface Soil
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-6 i
Drawn by:
mcr
Design by:
mcr
Checked by:

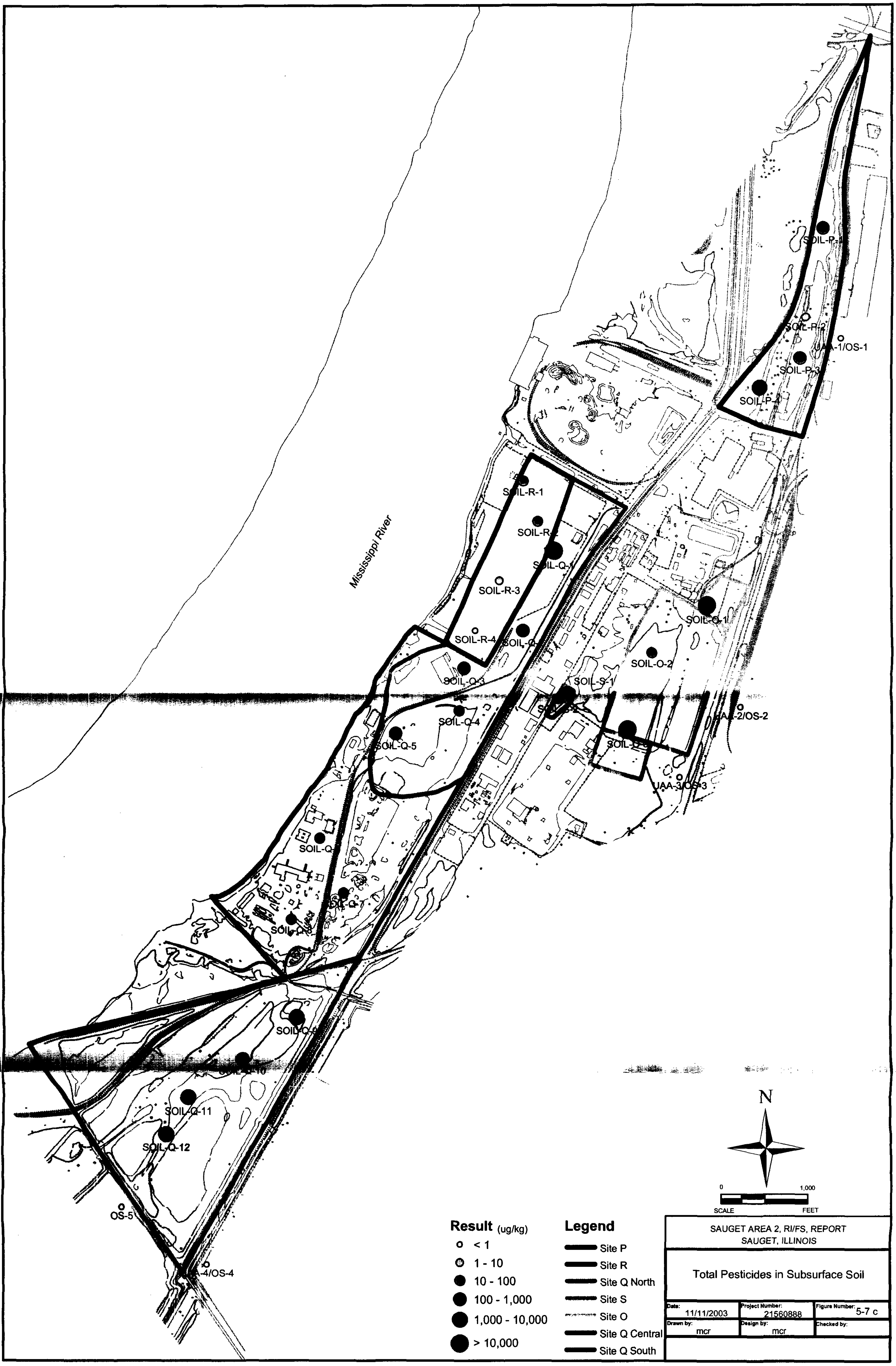


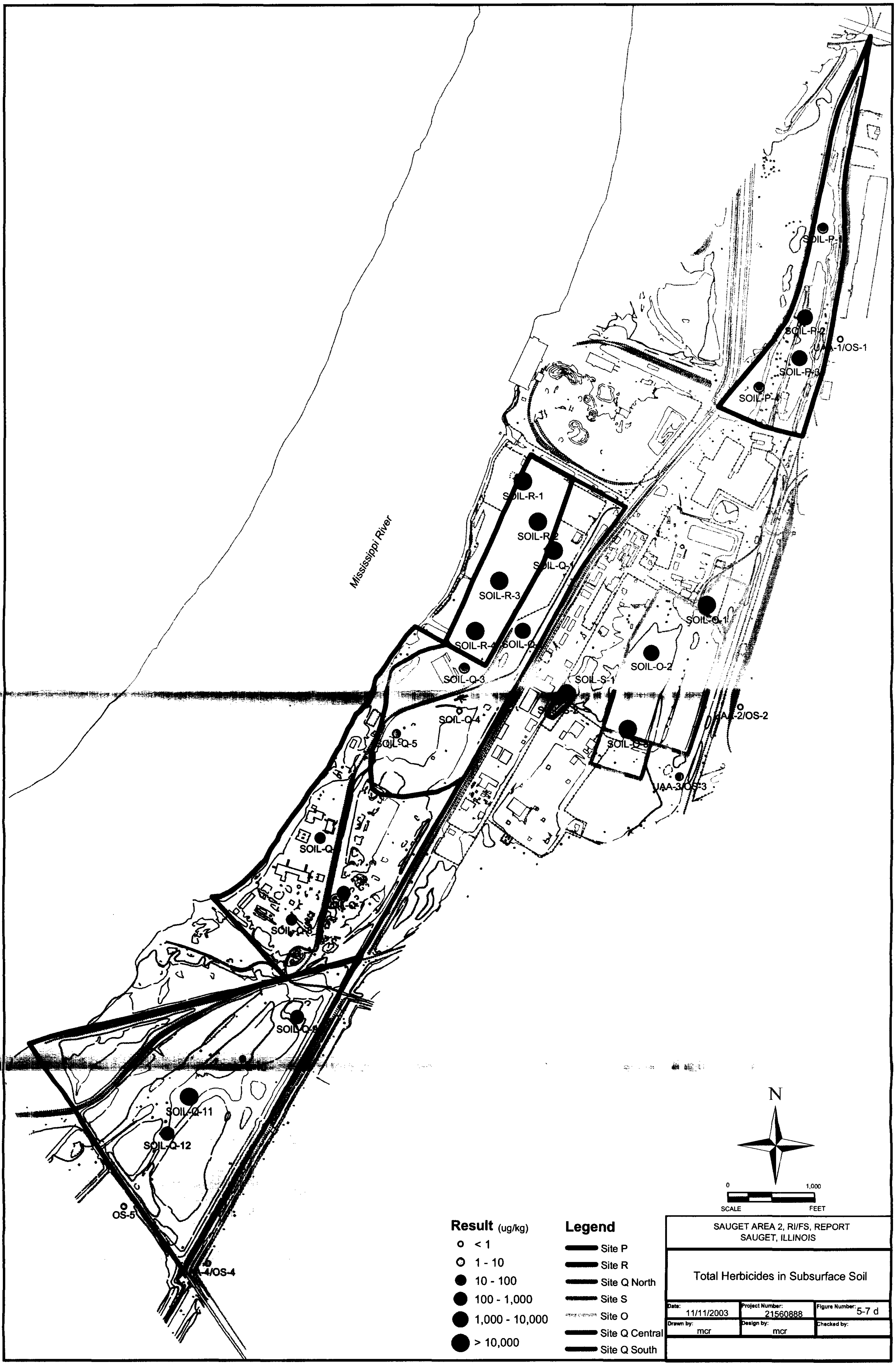
Mississippi River
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-O-1
SOIL-O-2
SOIL-S-1
SOIL-Q-12
SOIL-Q-13
SOIL-Q-11
OS-5
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Surface Soil
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-6 j
Drawn by:
mcr
Design by:
mcr
Checked by:

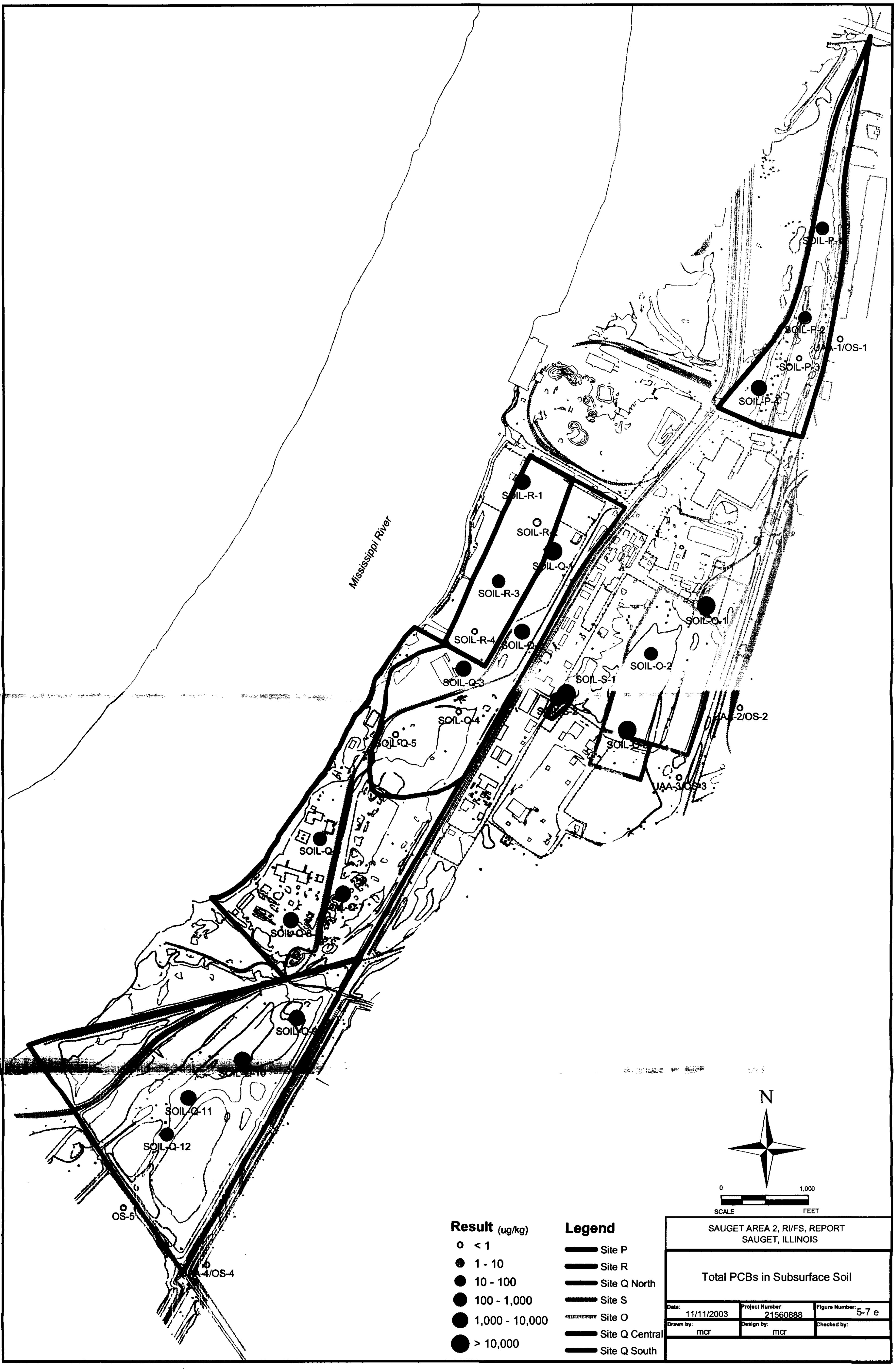

Mississippi River
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-O-2
SOIL-S-1
SOIL-Q-4
SOIL-Q-5
SOIL-Q-11
SOIL-Q-12
UAA-1/OS-1
OS-5
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 a
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
SOIL-P-2
SOIL-P-3
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-O-2
UAA-2/OS-2
SOIL-Q-4
SOIL-Q-5
SOIL-Q-10
SOIL-Q-11
SOIL-Q-12
OS-5
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 b
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
SOIL-P-1
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-P-4
SOIL-R-1
SOIL-R-2
SOIL-Q-1
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-Q-3
SOIL-S-1
UAA-2/OS-2
SOIL-Q-4
SOIL-Q-5
UAA-3/OS-3
SOIL-Q-9
SOIL-Q-11
SOIL-Q-12
OS-5
4/OS-4
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 c
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
SOIL-R-1
SOIL-R-3
SOIL-O-2
SOIL-Q-3
SOIL-Q-4
SOIL-Q-11
SOIL-Q-12
SOIL-S-1
OS-5
UAA-2/OS-2
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 d
Drawn by: mcr
Design by: mcr
Checked by:

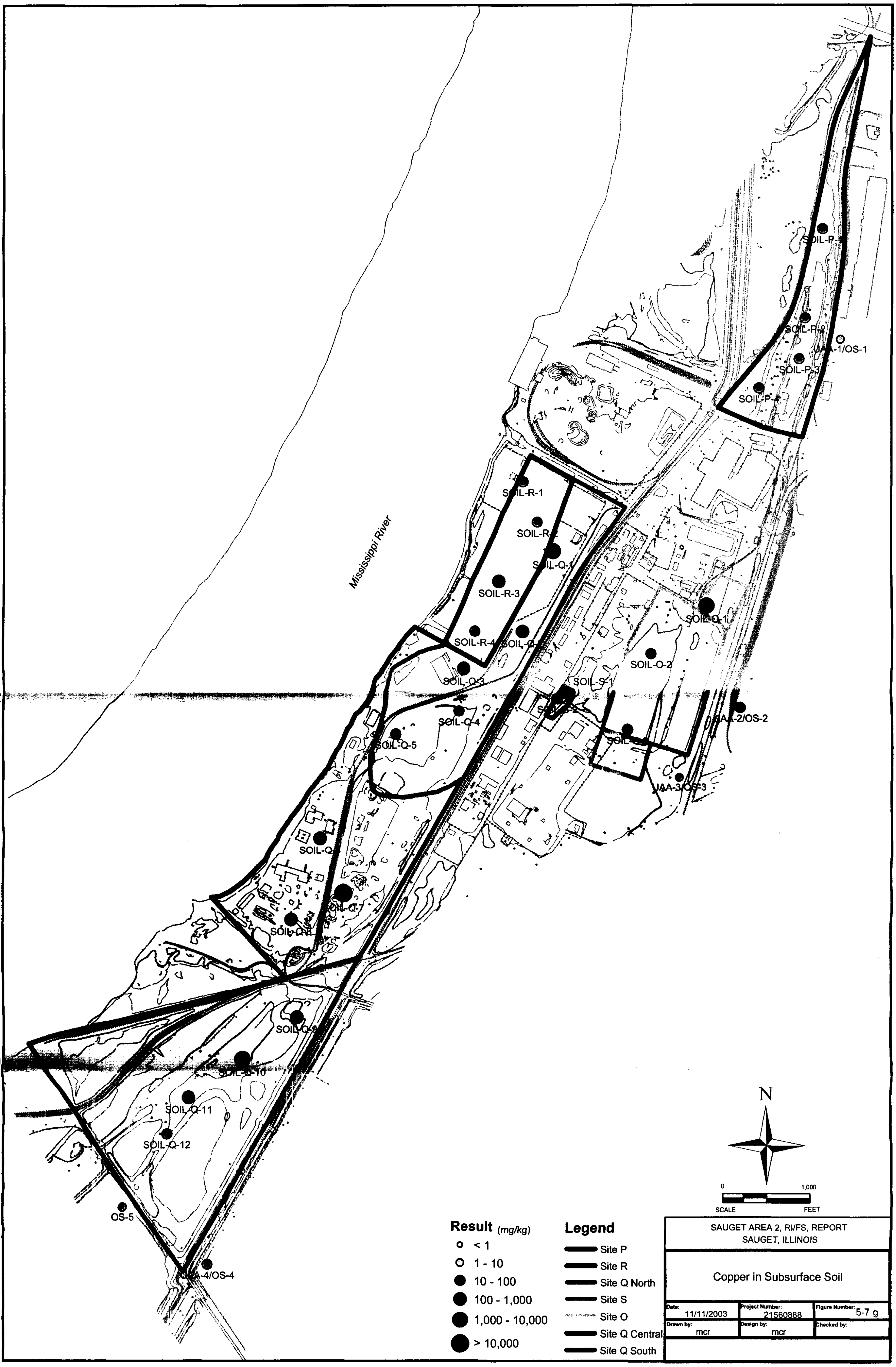


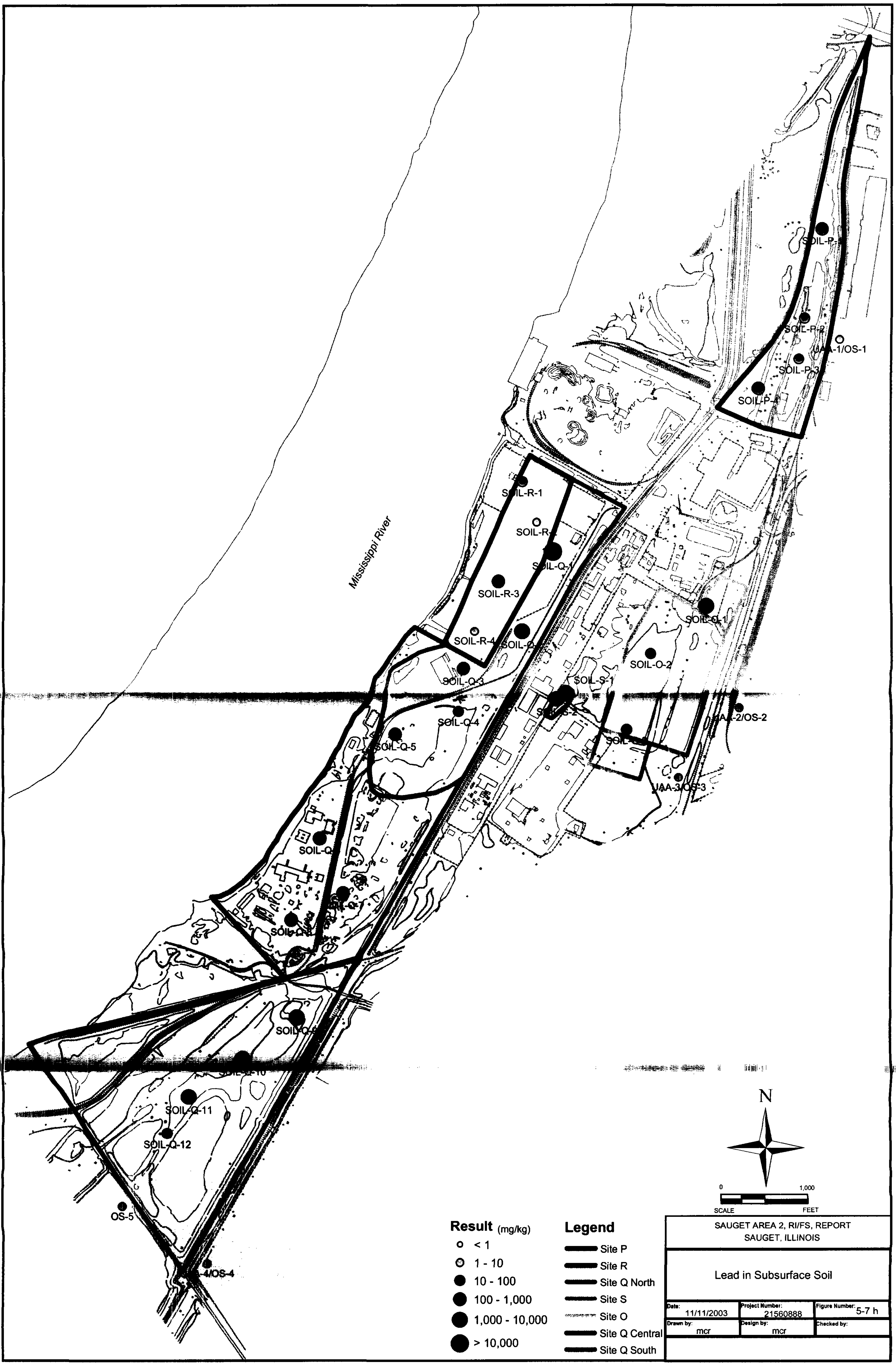
Mississippi River
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-S-1
UAA-2/OS-2
UAA-3/OS-3
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-Q-8
SOIL-Q-11
SOIL-Q-12
OS-5
N
0
1,000
SCALE
FEET
Result (ug/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 e
Drawn by: mcr
Design by: mcr
Checked by:

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Subsurface Soil

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-7 f
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-O-1
SOIL-O-2
SOIL-Q-4
SOIL-Q-5
SOIL-Q-11
SOIL-Q-12
OS-5
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 g
Drawn by: mcr
Design by: mcr
Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Lead in Subsurface Soil

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-7 h
Drawn by: mcr	Design by: mcr	Checked by:

Mississippi River
SOIL-P-2
SOIL-P-3
UAA-1/OS-1
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-Q-1
SOIL-O-1
SOIL-O-2
SOIL-Q-3
SOIL-S-1
UAA-2/OS-2
SOIL-Q-4
SOIL-Q-5
UAA-3/OS-3
SOIL-Q-11
SOIL-Q-12
OS-5
UAA-4/OS-4
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Subsurface Soil
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-7 i
Drawn by:
mcr
Design by:
mcr
Checked by:

Mississippi River
SOIL-P-2
UAA-1/OS-1
SOIL-P-3
SOIL-R-1
SOIL-R-3
SOIL-R-4
SOIL-Q-3
SOIL-Q-4
SOIL-Q-5
SOIL-O-1
SOIL-O-2
SOIL-S-1
UAA-2/OS-2
UAA-3/OS-3
SOIL-Q-10
SOIL-Q-11
SOIL-Q-12
OS-5
UAA-4/OS-4
N
0
1,000
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Subsurface Soil
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-7 j
Drawn by: mcr
Design by: mcr
Checked by:

AIR-P-1
AIR-P-2
AIR-P-4
AIR-P-3
Mississippi River
AIR-R-2
AIR-R-3
AIR-Q-1
AIR-Q-6
AIR-Q-7
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 a
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
AIR-R-1
AIR-P-2
AIR-P-4
AIR-P-3
AIR-R-2
AIR-Q-6
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 b
Drawn by: mcr
Design by: mcr
Checked by:

Mississippi River
AIR-P-1
AIR-P-2
AIR-P-3
AIR-P-4
AIR-R-1
AIR-R-2
AIR-R-3
AIR-R-4
AIR-Q-1
AIR-Q-3
AIR-Q-5
AIR-Q-6
AIR-Q-7
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 c
Drawn by: mcr
Design by: mcr
Checked by:

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

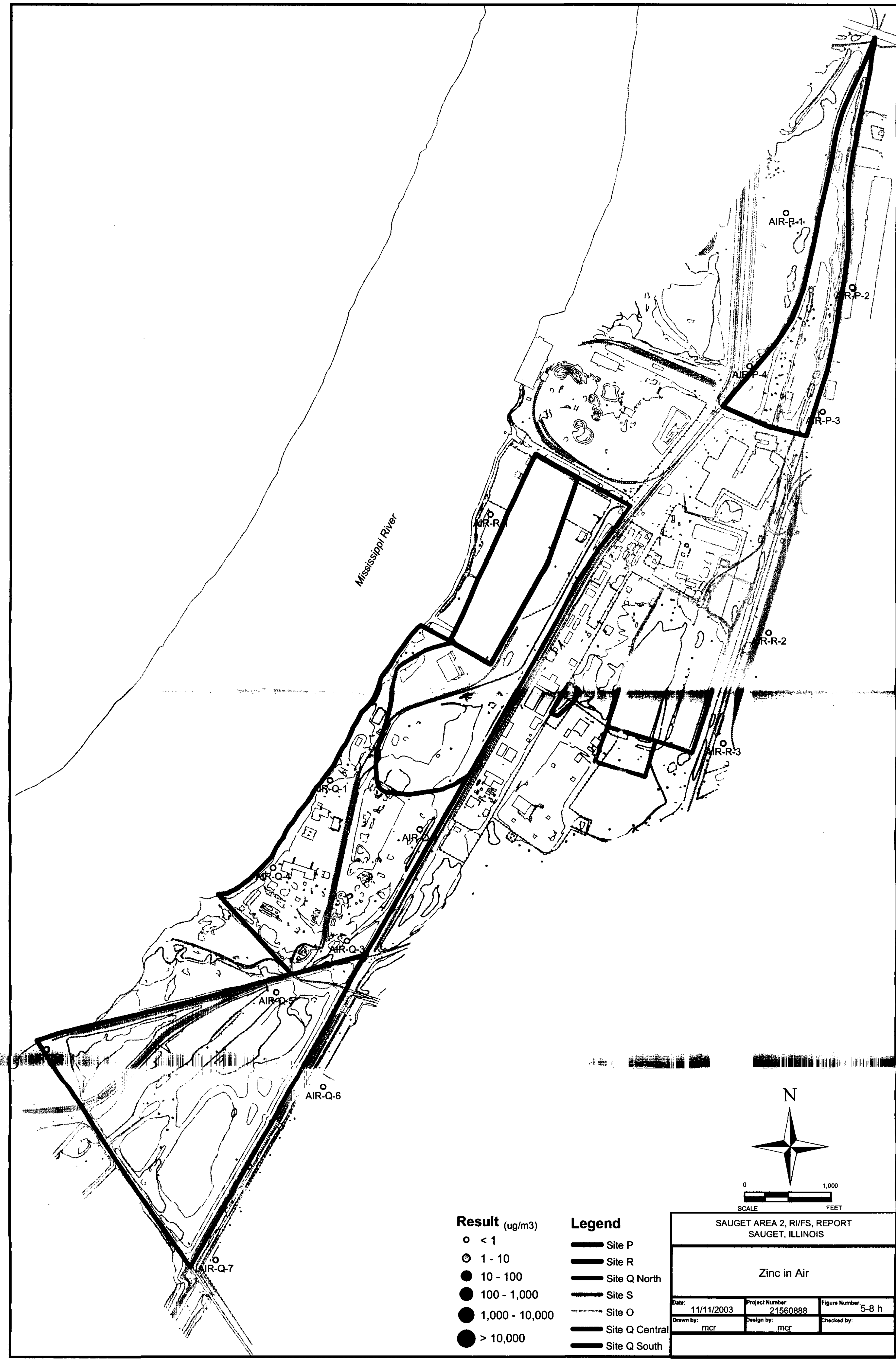
Total PCBs in Air

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-8 d
Drawn by: mcr	Design by: mcr	Checked by:

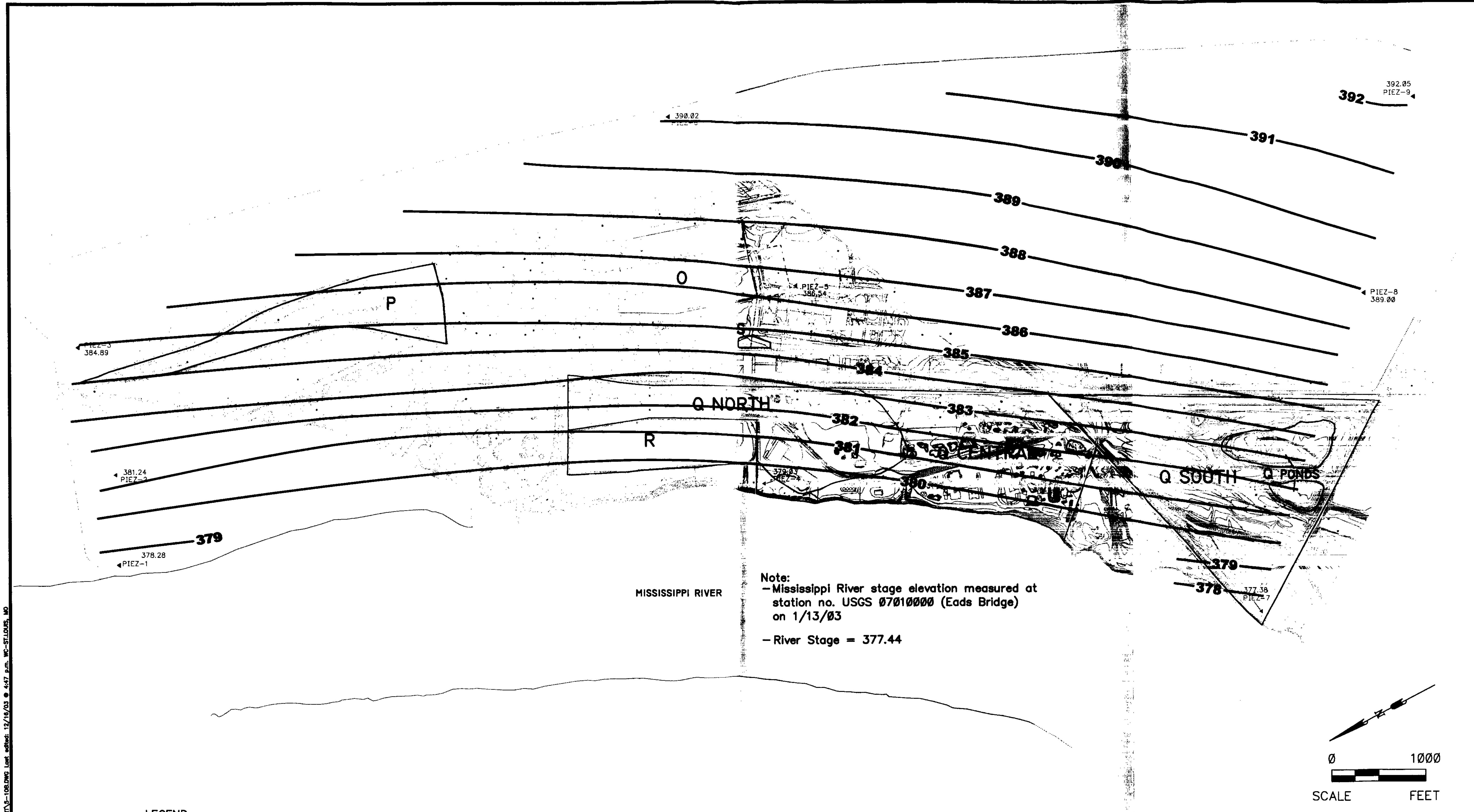

Mississippi River
AIR-R-1
AIR-P-3
AIR-R-2
AIR-R-3
AIR-Q-1
AIR-Q-3
AIR-Q-6
AIR-Q-7
N
0
1,000
SCALE
FEET
Result (pg/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 e
Drawn by: mcr
Design by: mcr
Checked by:

Mississippi River
AIR-P-1
AIR-P-2
AIR-P-3
AIR-P-4
AIR-R-1
AIR-R-2
AIR-R-3
AIR-Q-1
AIR-Q-3
AIR-Q-6
AIR-Q-7
WASTE-S-1
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Air
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-8 f
Drawn by:
mcr
Design by:
mcr
Checked by:

Mississippi River
AIR-R-1
AIR-P-2
AIR-P-4
AIR-P-3
AIR-R-2
AIR-R-3
AIR-Q-1
AIR-Q-3
AIR-Q-6
AIR-Q-7
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 g
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
AIR-P-1
AIR-P-2
AIR-P-3
AIR-P-4
AIR-R-1
AIR-R-2
AIR-R-3
AIR-Q-1
AIR-Q-2
AIR-Q-3
AIR-Q-4
AIR-Q-5
AIR-Q-6
AIR-Q-7
N
0
1,000
SCALE
FEET
Result (ug/m3)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Air
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-8 h
Drawn by: mcr
Design by: mcr
Checked by:



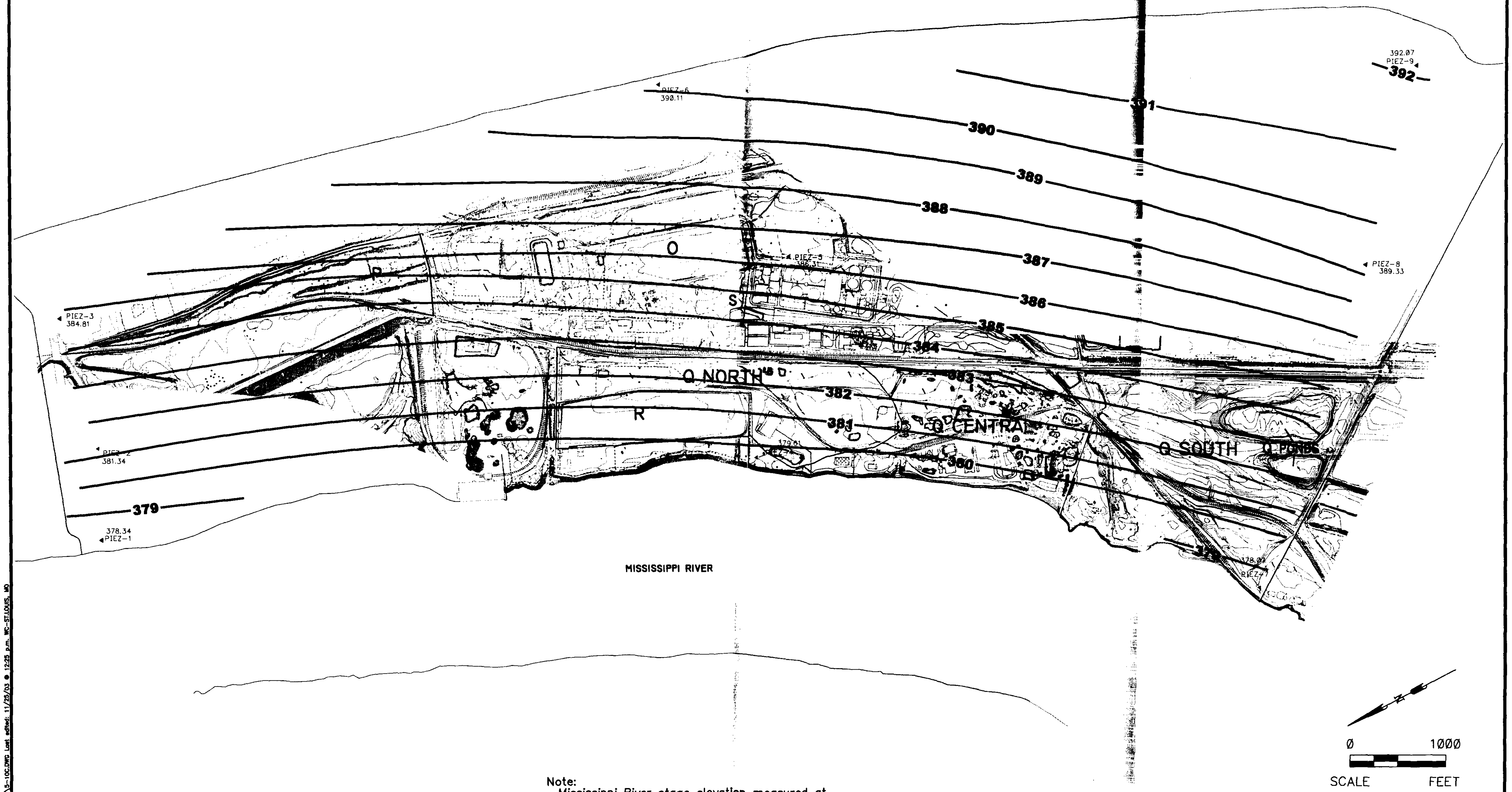
LEGEND

▲ Piezometer Cluster

—392— Groundwater Elevation Contour (Ft)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd /7/03 DSGN. BY:bh CHKD. BY:	Groundwater Elevation Contour Map Medium - 1/23/03
FIG. NO. 5-10b	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-10B.DWG Last edited: 12/16/03 @ 4:47 p.m. WC-ST.LOUIS, MO



LEGEND

▲ Piezometer Cluster

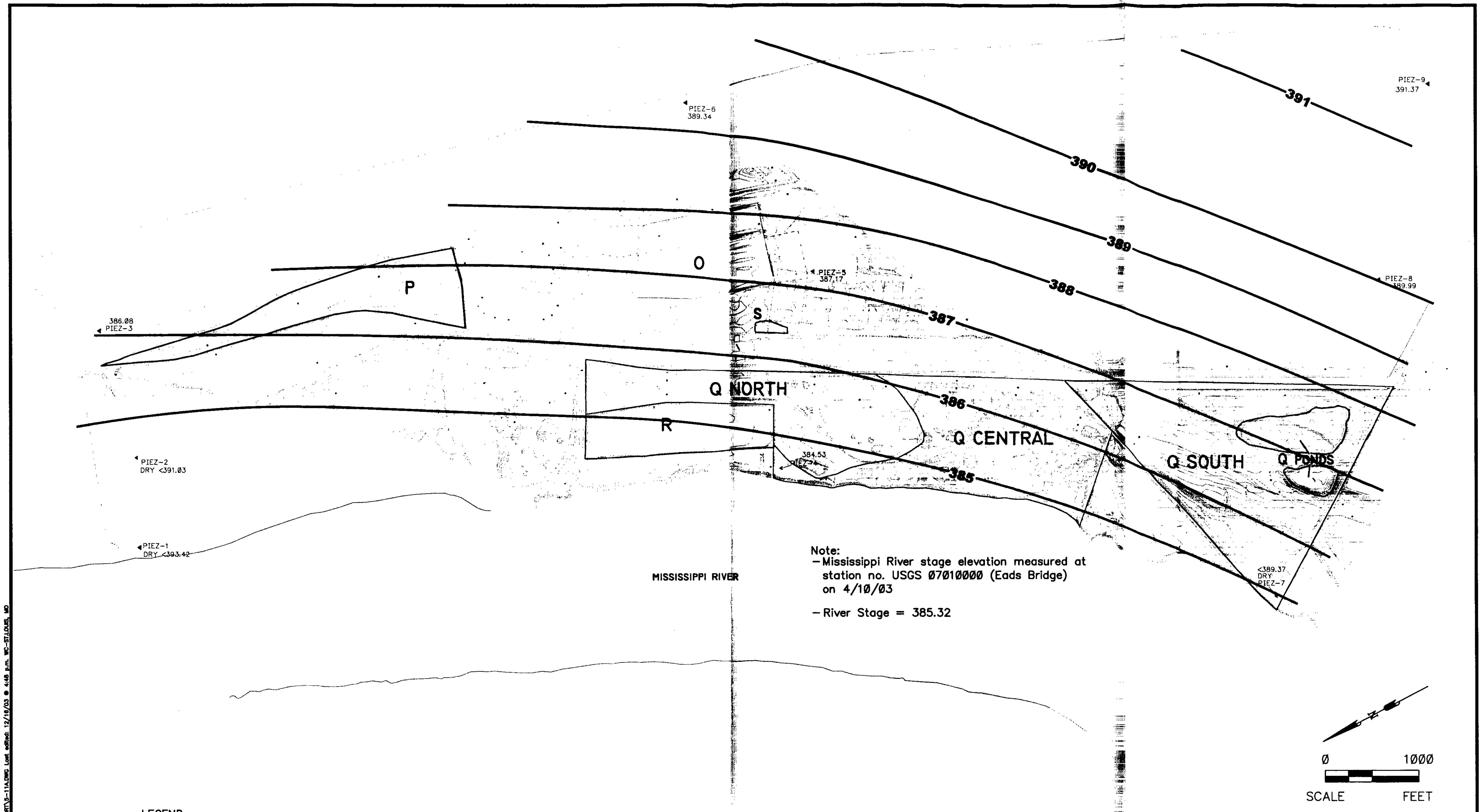
—392— Groundwater Elevation Contour (Ft)

Note:
- Mississippi River stage elevation measured at station no. USGS 07010000 (Eads Bridge) on 1/13/03
- River Stage = 377.44

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY: DSGN. BY: CHKD. BY:	10/7/03	Groundwater Elevation Contour Maps Deep – 1/23/03	FIG. NO. 5-10c



Note:
- Mississippi River stage elevation measured at station no. USGS 07010000 (Eads Bridge) on 4/10/03
- River Stage = 385.32

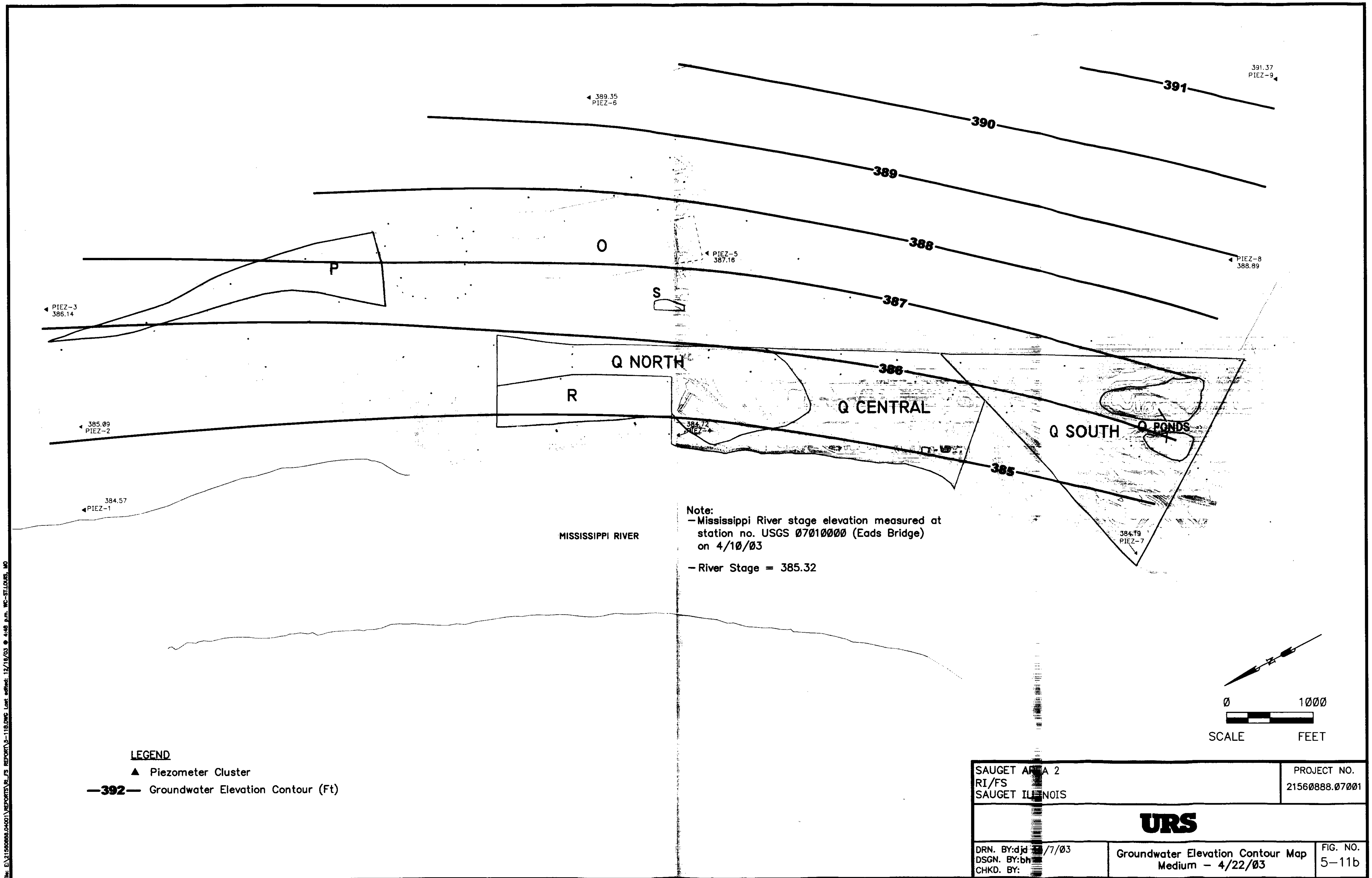
LEGEND

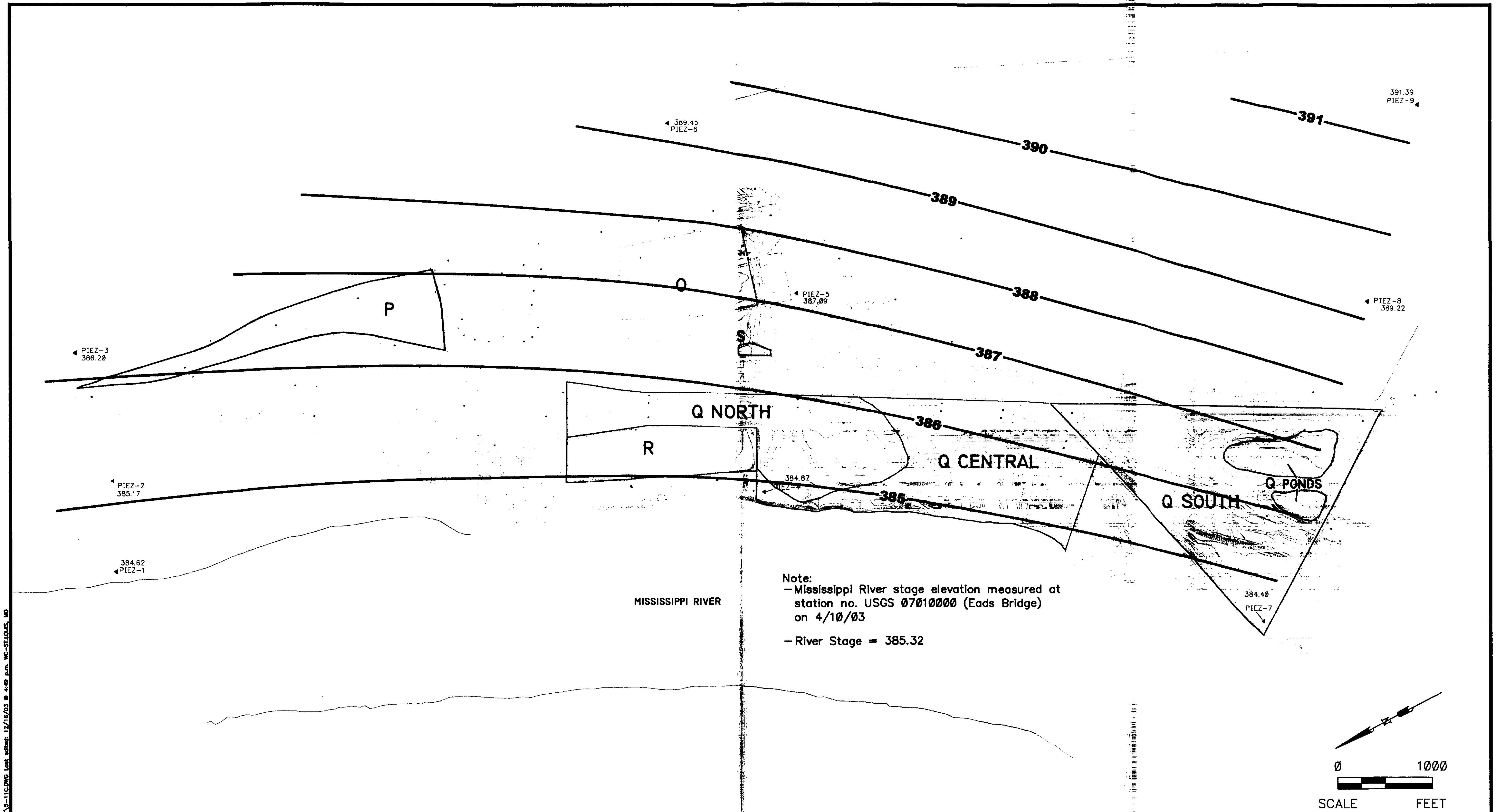
▲ Piezometer Cluster

—392— Groundwater Elevation Contour (Ft)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
	URS	
DRN. BY:djd /7/03 DSGN. BY:bh CHKD. BY:	Groundwater Elevation Contour Map Shallow – 4/22/03	FIG. NO. 5-11a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-11A.DWG Last edited: 12/18/03 @ 4:48 p.m. WC-ST.LOUIS, MO


391
390
389
388
387
386
385
389.35
PIEZ-6
391.37
PIEZ-9
PIEZ-5
387.16
PIEZ-8
388.89
PIEZ-3
386.14
385.09
PIEZ-2
384.57
PIEZ-1
384.72
PIEZ-4
384.19
PIEZ-7
O
P
S
Q NORTH
R
Q CENTRAL
Q SOUTH
Q PONDS
MISSISSIPPI RIVER
Note:
—Mississippi River stage elevation measured at station no. USGS 07010000 (Eads Bridge) on 4/10/03
—River Stage = 385.32
0 1000
SCALE FEET
LEGEND
▲ Piezometer Cluster
—392— Groundwater Elevation Contour (Ft)
SAUGET AREA 2
RI/FS
SAUGET ILLINOIS
PROJECT NO.
21560888.07001
URS
DRN. BY:djd /7/03
DSGN. BY:bh
CHKD. BY:
Groundwater Elevation Contour Map
Medium – 4/22/03
FIG. NO.
5–11b

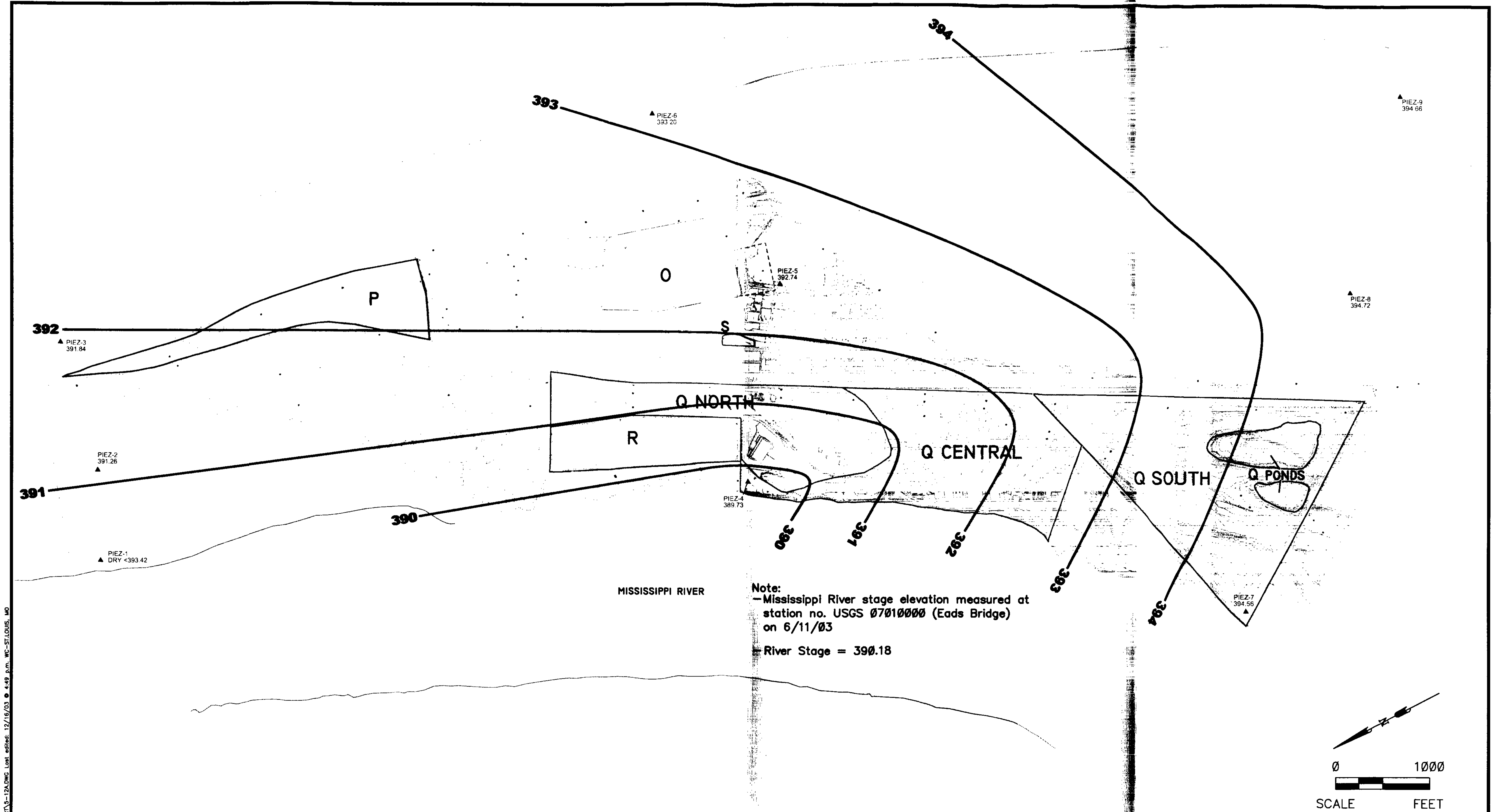


LEGEND

▲ Piezometer Cluster

—392— Groundwater Elevation Contour (Ft)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: djd /7/03 DSGN. BY: bh CHKD. BY:	Groundwater Elevation Contour Map Deep – 4/22/03	FIG. NO. 5–11c



LEGEND

▲ Piezometer Cluster

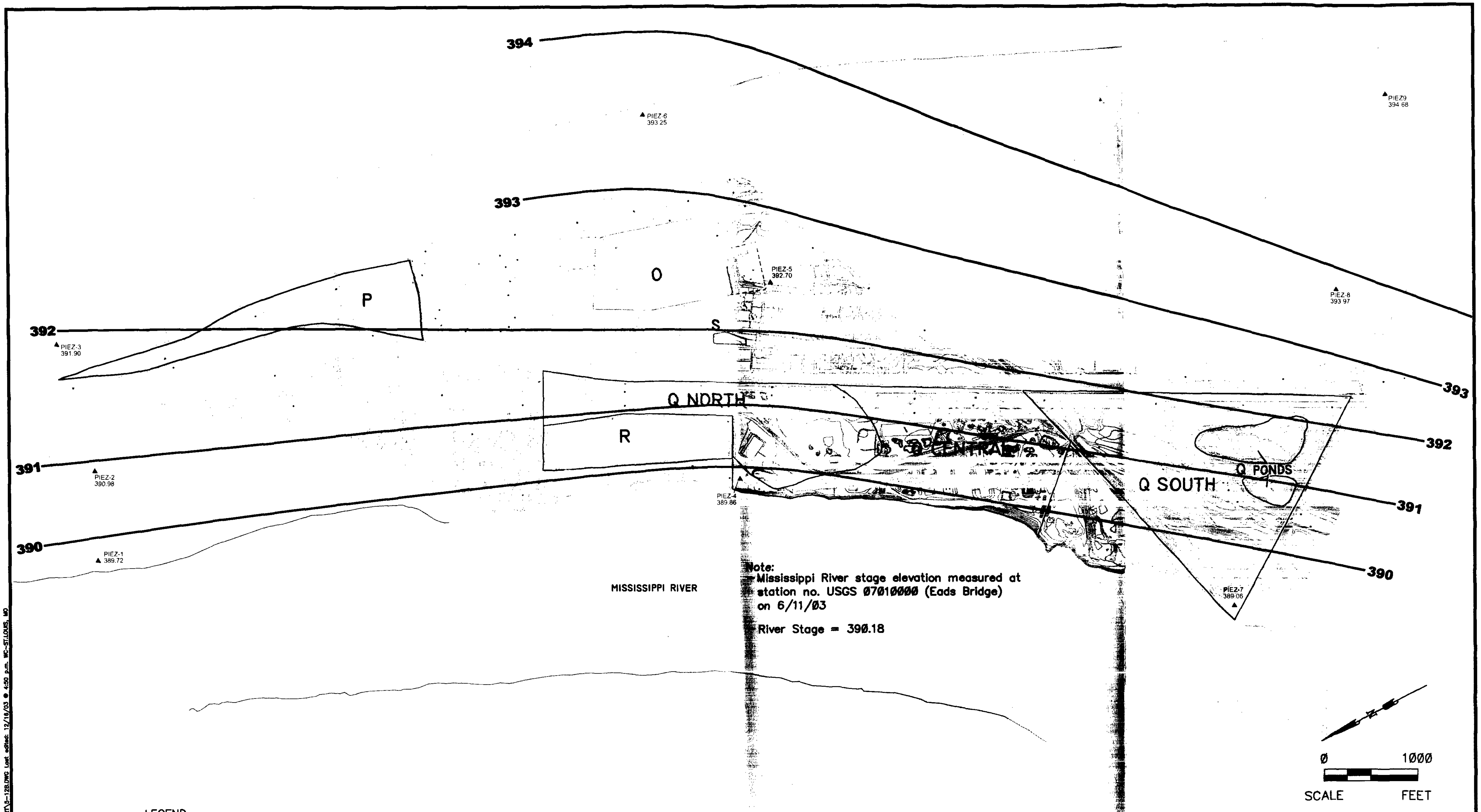
—392— Groundwater Elevation Contour (Ft)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY:djd /7/03 DSGN. BY:bh CHKD. BY:	Groundwater Elevation Contour Map Shallow – 6/9/03	FIG. NO. 5–12a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-12A.DWG Last edited: 12/16/03 @ 4:49 p.m. WC-ST.LOUIS, MO



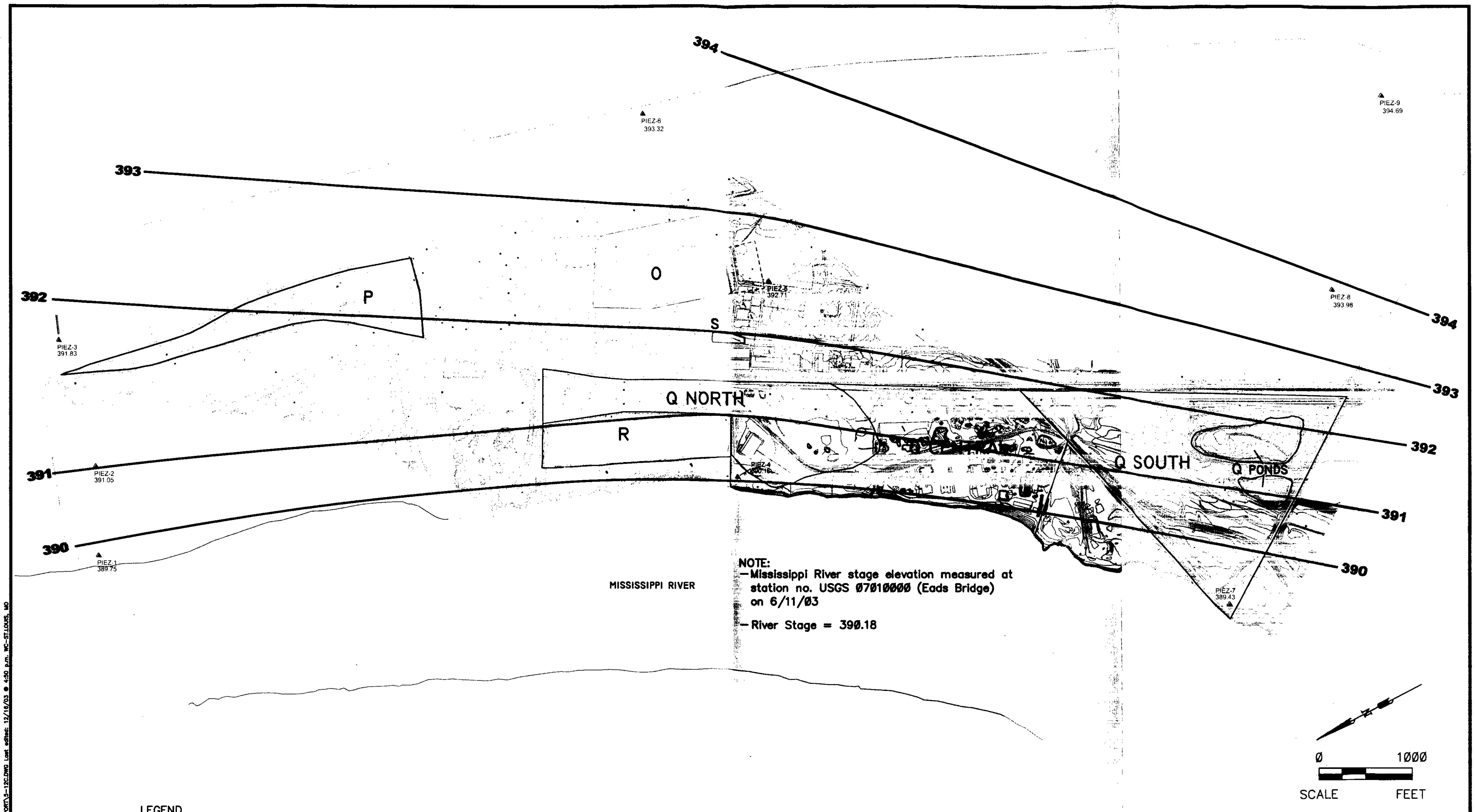
LEGEND

▲ Piezometer Cluster

—392— Groundwater Elevation Contour (Ft)

SAUGET A[illegible]A 2 RI/FS SAUGET IL[illegible]NOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd [illegible]/7/03 DSGN. BY:bh CHKD. BY:	Groundwater Elevation Contour Map Medium – 6/9/03
FIG. NO. 5–12b	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-12B.DWG Last edited: 12/16/03 @ 4:50 p.m. WC-ST.LOUIS, MO



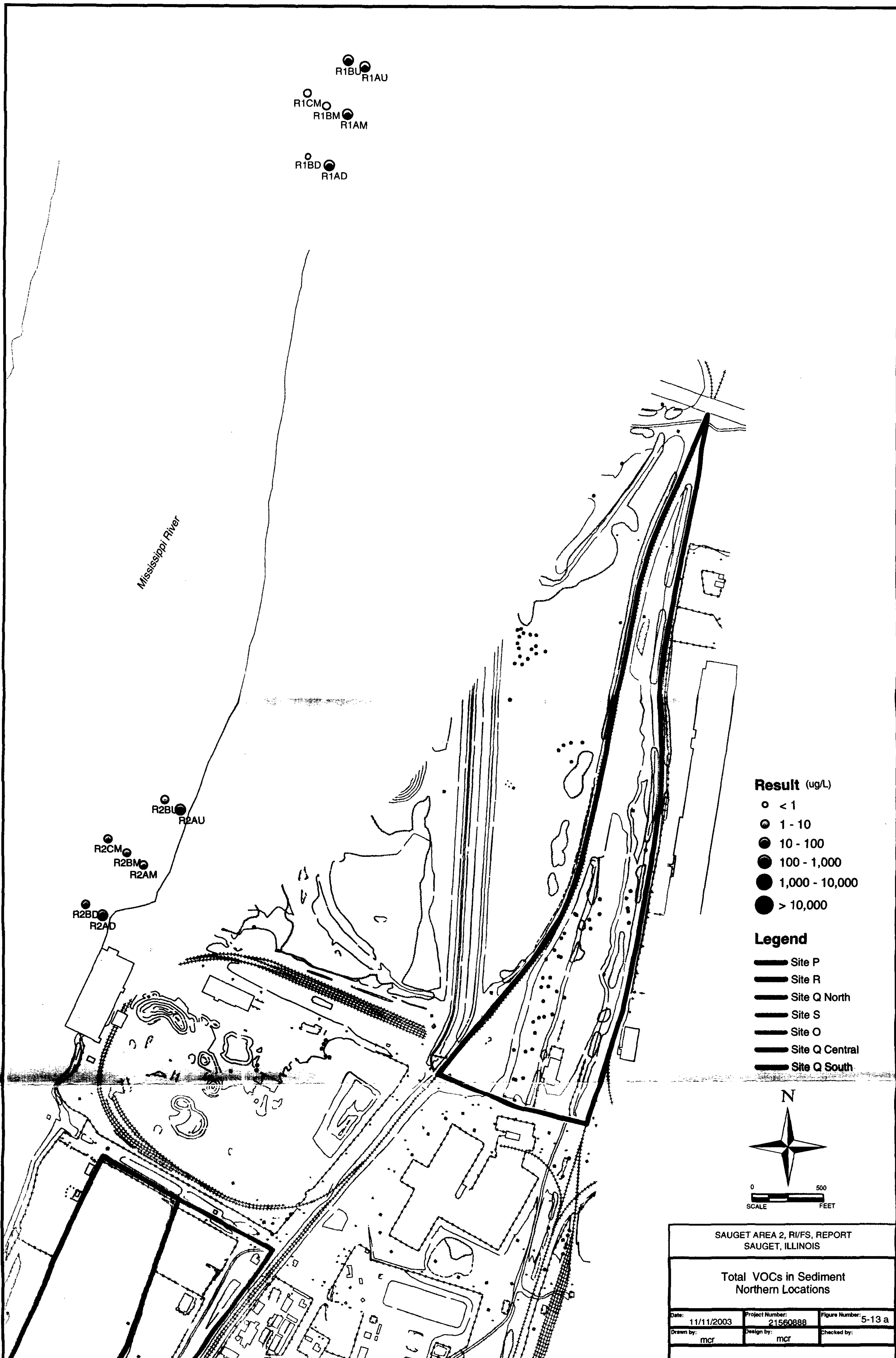
LEGEND

▲ Piezometer Cluster

—392— Groundwater Elevation Contour (Ft)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 2156Ø888.07ØØ1
URS		
DRN. BY:djd 1?/7/Ø3 DSGN. BY:bh CHKD. BY:	Groundwater Elevation Contour Map Deep – 6/9/Ø3	FIG. NO. 5–12c

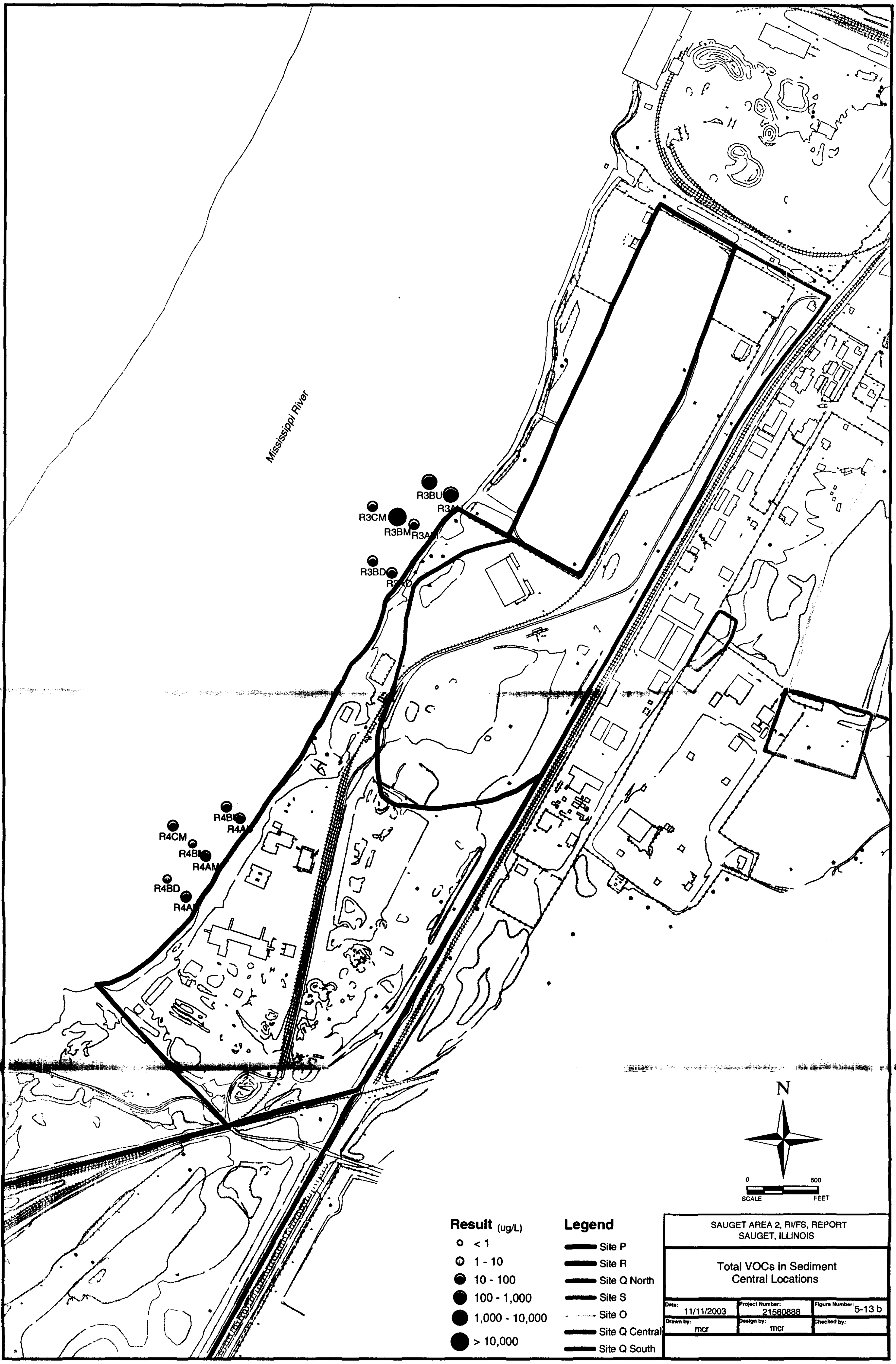
File: E:\21560888.04001\REPORTS\RI_FS REPORT\5-12C.DWG Last edited: 12/16/03 @ 4:50 p.m. WC-ST.LOUIS, MO

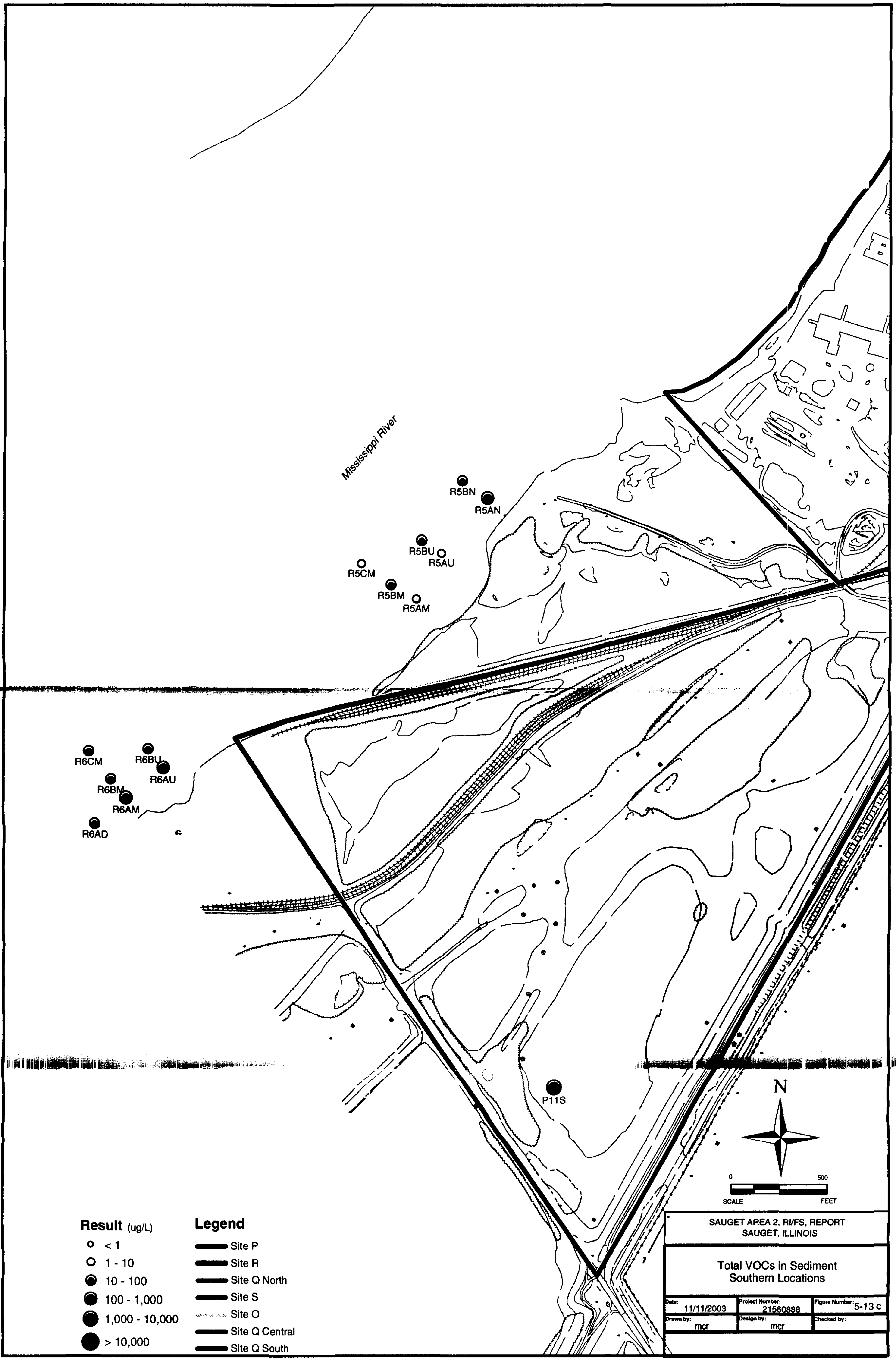


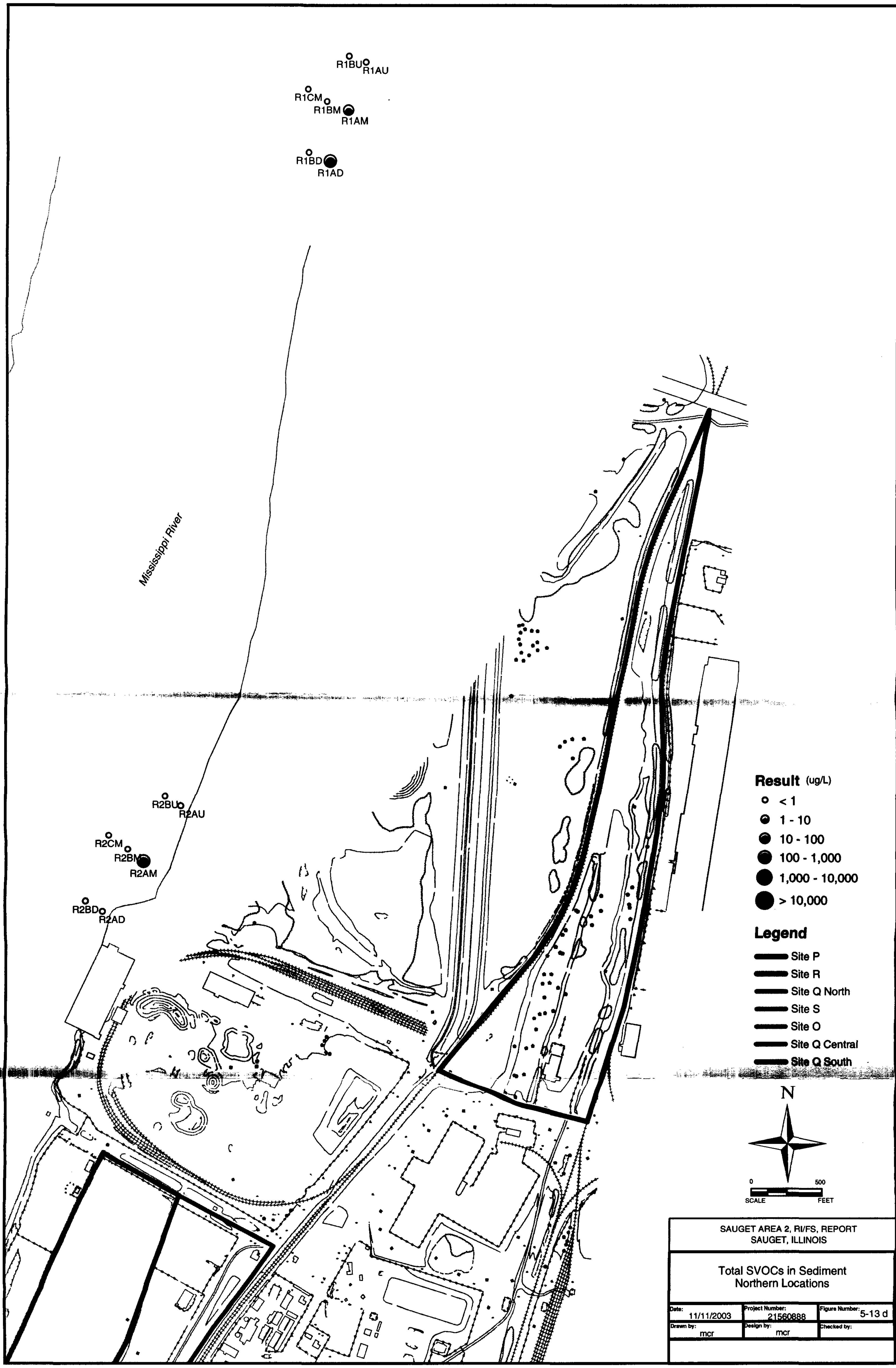
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total VOCs in Sediment
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 a
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
R3BU
R3CM
R3BM
R3BD
R4CM
R4BD
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 b
Drawn by: mcr
Design by: mcr
Checked by:

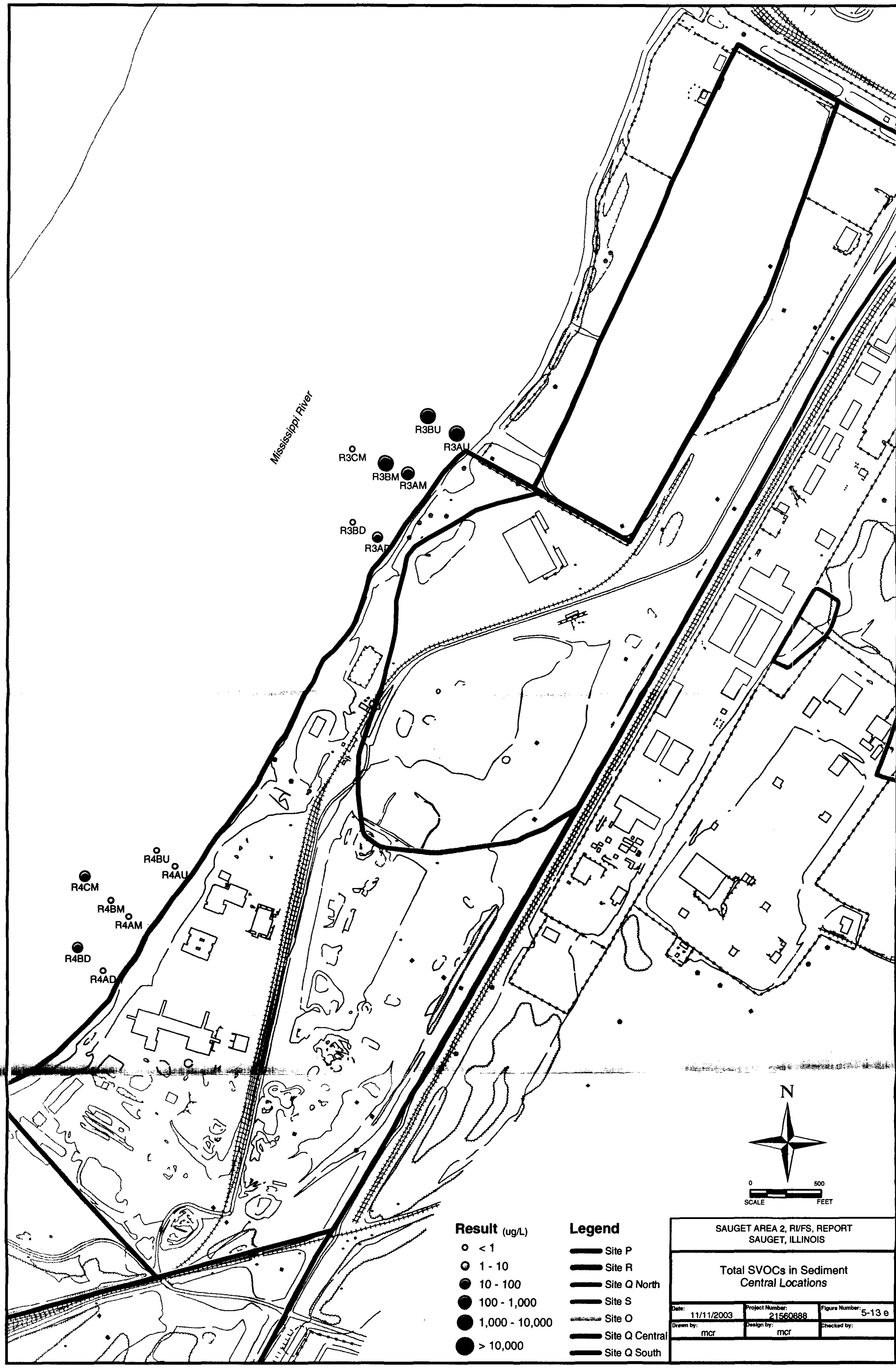

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Sediment
Southern Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-13 c
Drawn by:
mcr
Design by:
mcr
Checked by:



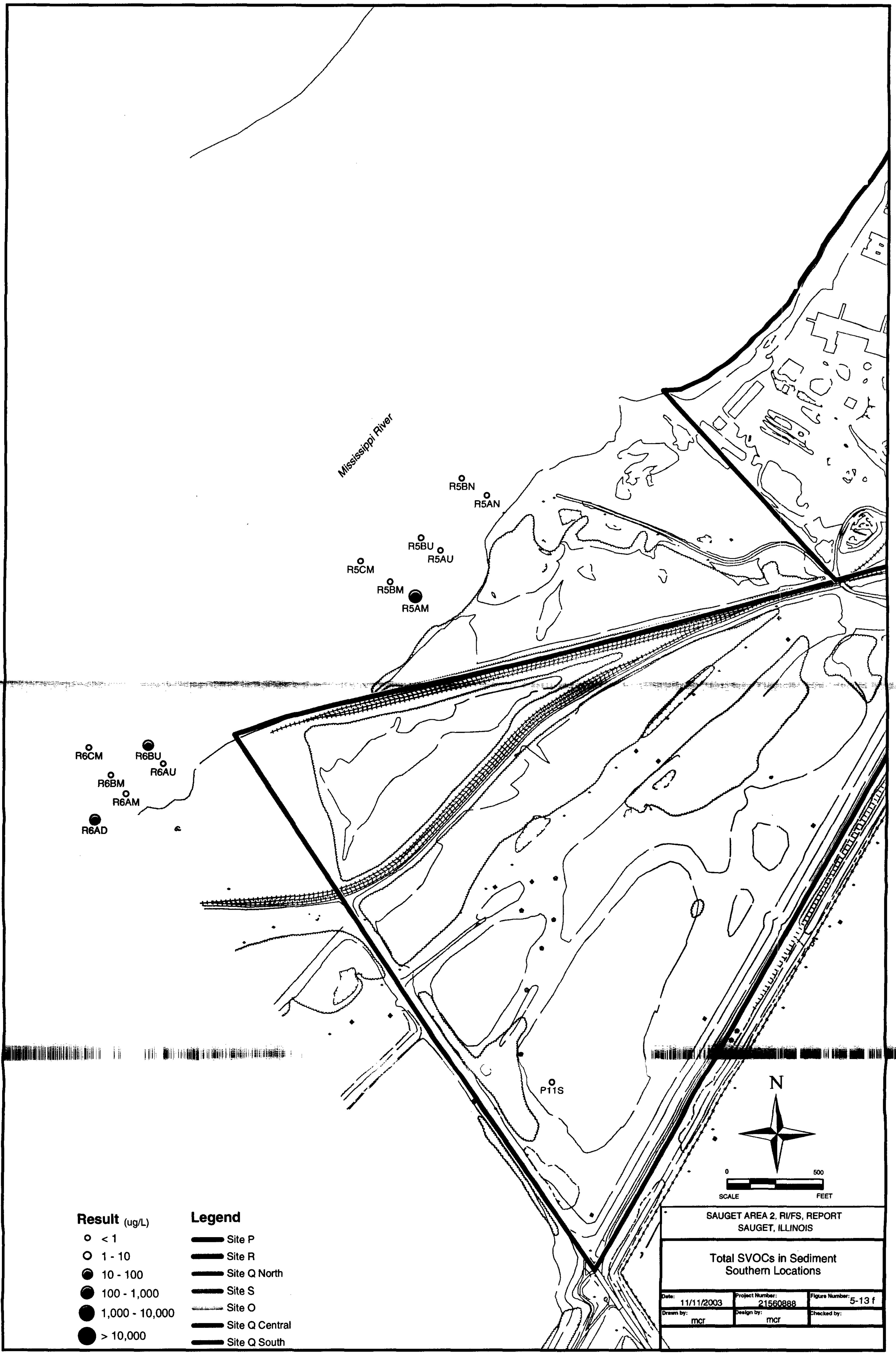
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total SVOCs in Sediment
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 d
Drawn by: mcr	Design by: mcr	Checked by:



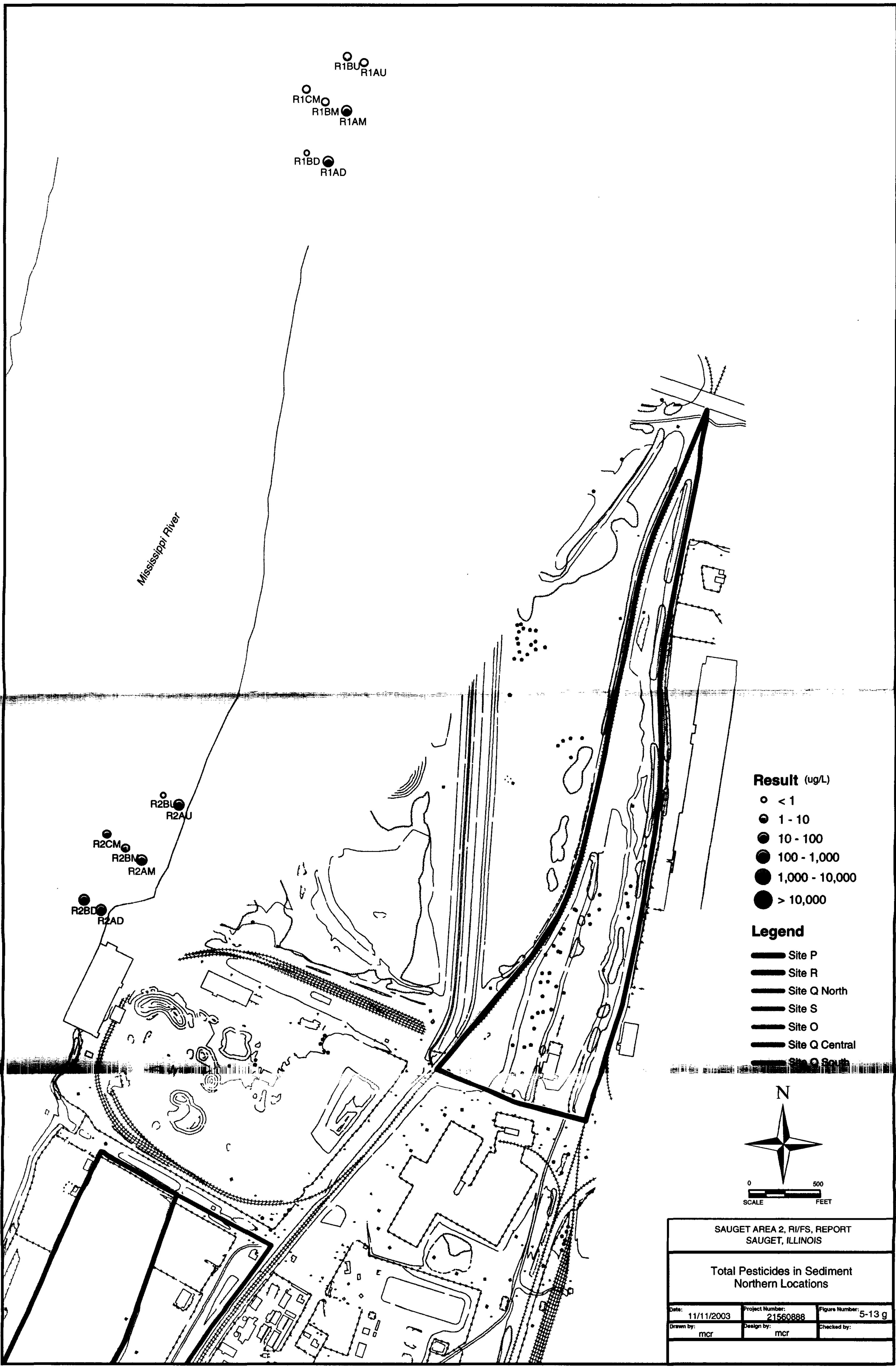
SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Total SVOCs in Sediment *Central Locations*		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 e
Drawn by: mcr	Design by: mcr	Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total SVOCs in Sediment
Southern Locations

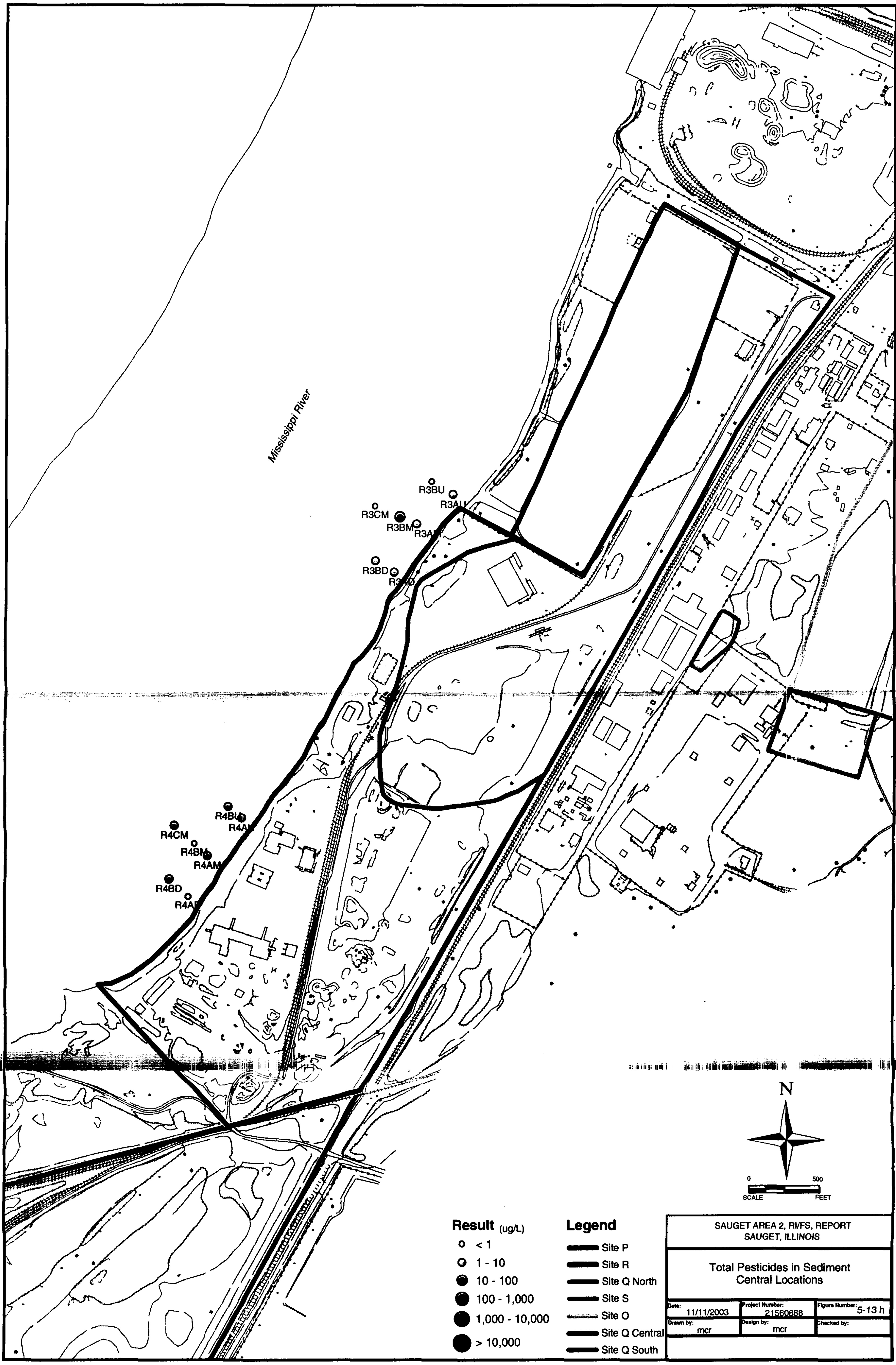
Date:	Project Number:	Figure Number:
11/11/2003	21560888	5-13 f
Drawn by: mcr	Design by: mcr	Checked by:



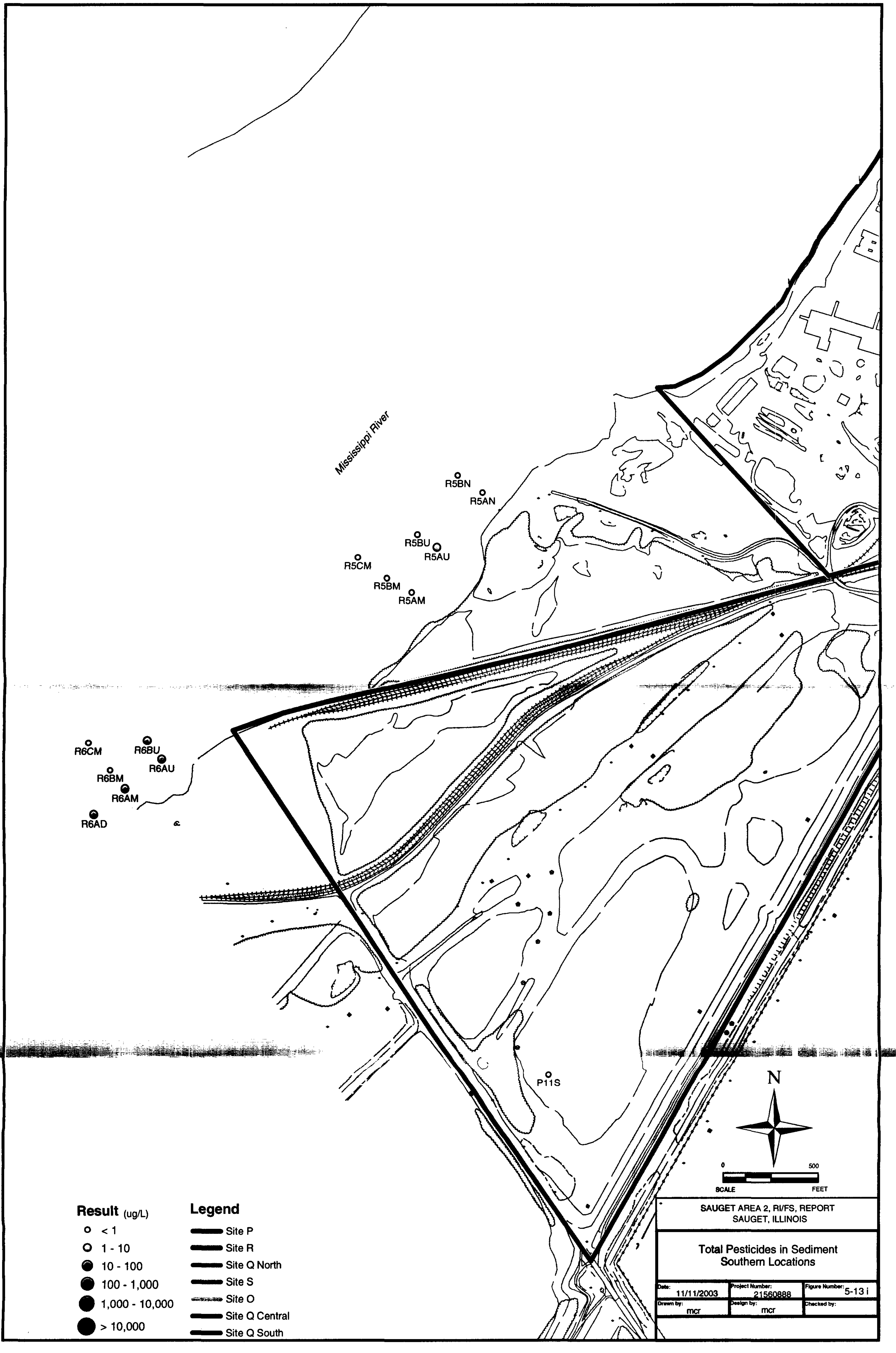
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

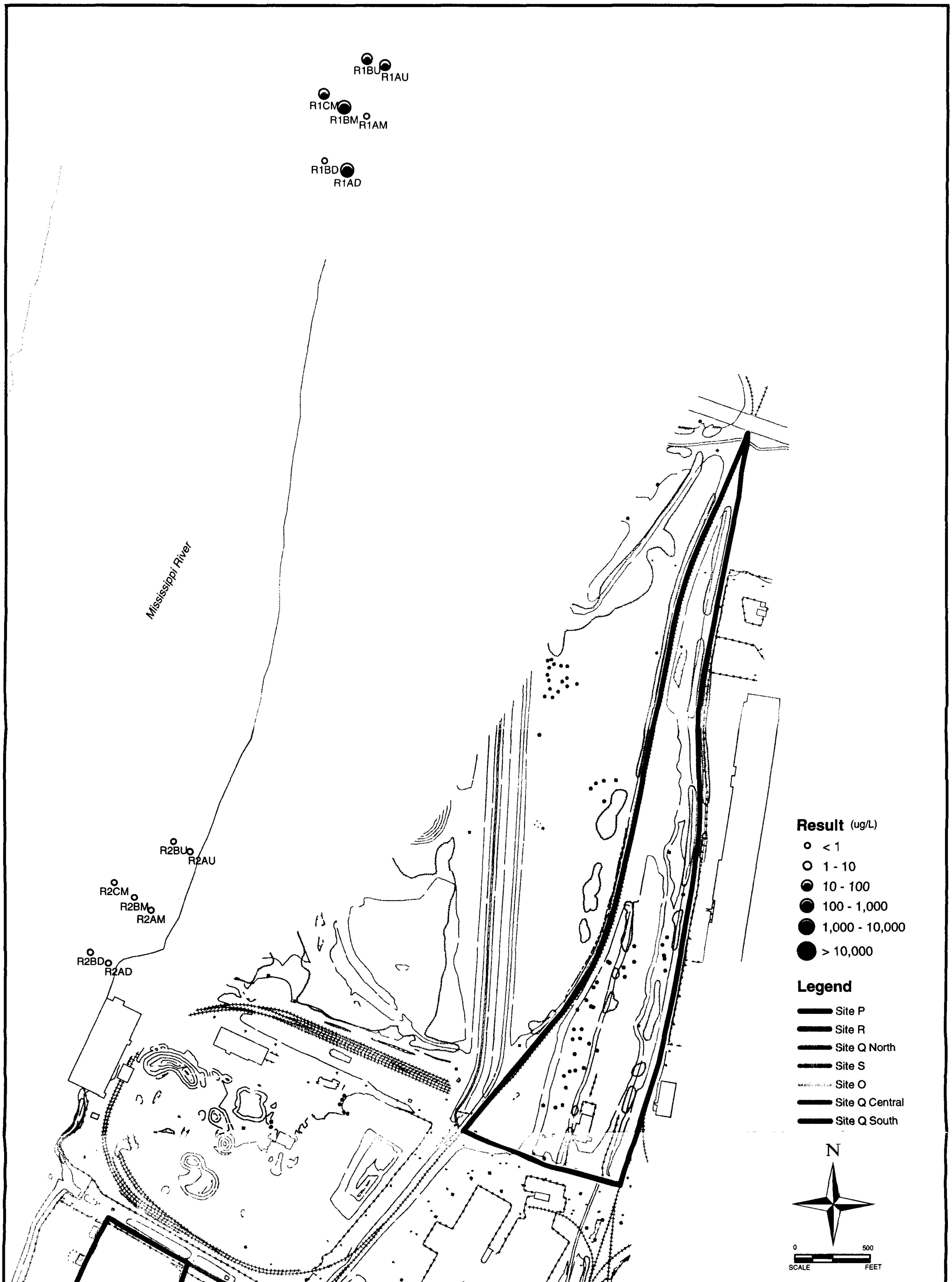
Total Pesticides in Sediment
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 g
Drawn by: mcr	Design by: mcr	Checked by:



Mississippi River
R3BU
R3AU
R3CM
R3BM
R3BD
R4BU
R4CM
R4BM
R4AM
R4BD
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 h
Drawn by: mcr
Design by: mcr
Checked by:

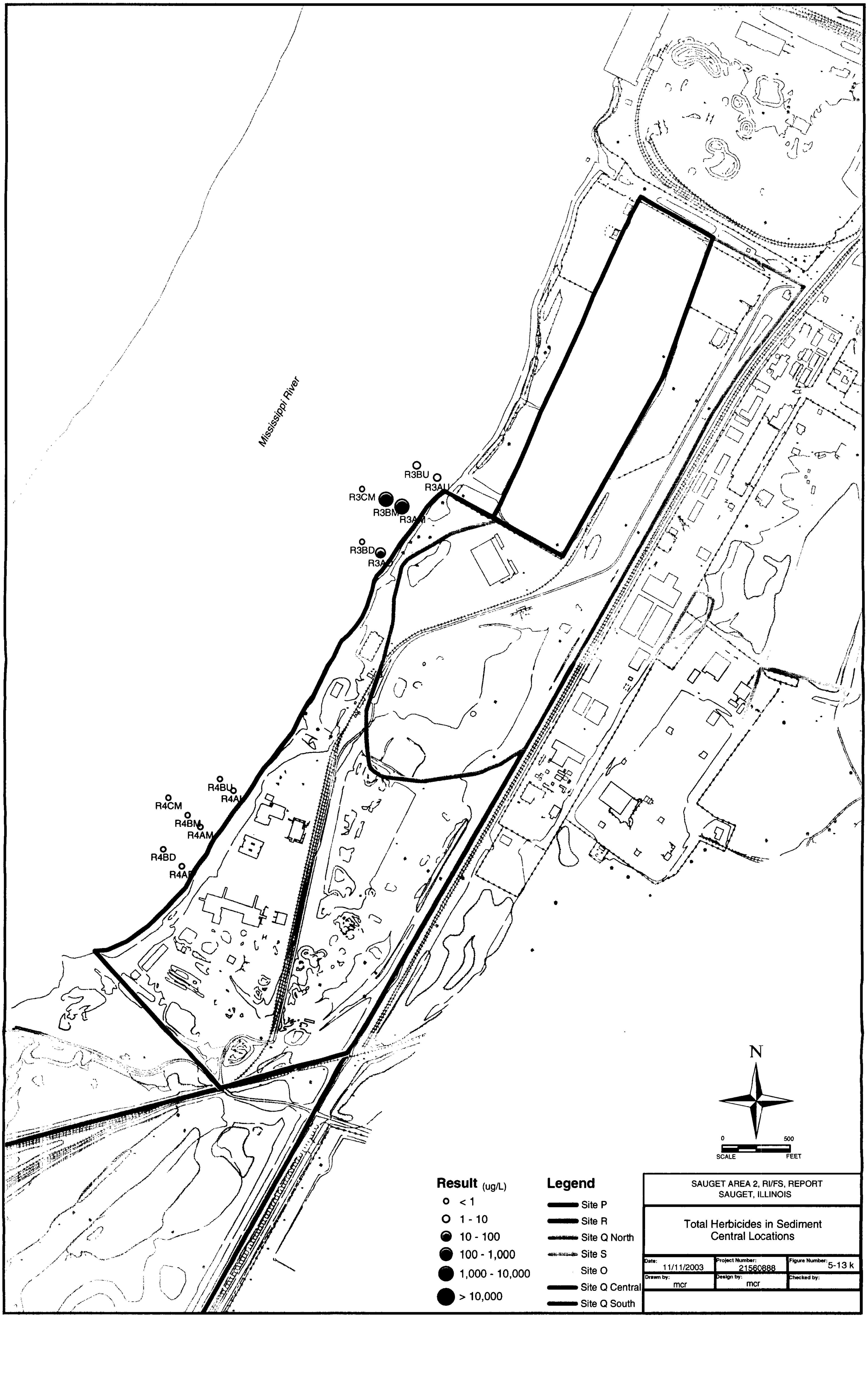

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 i
Drawn by: mcr
Design by: mcr
Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Herbicides in Sediment
Northern Locations

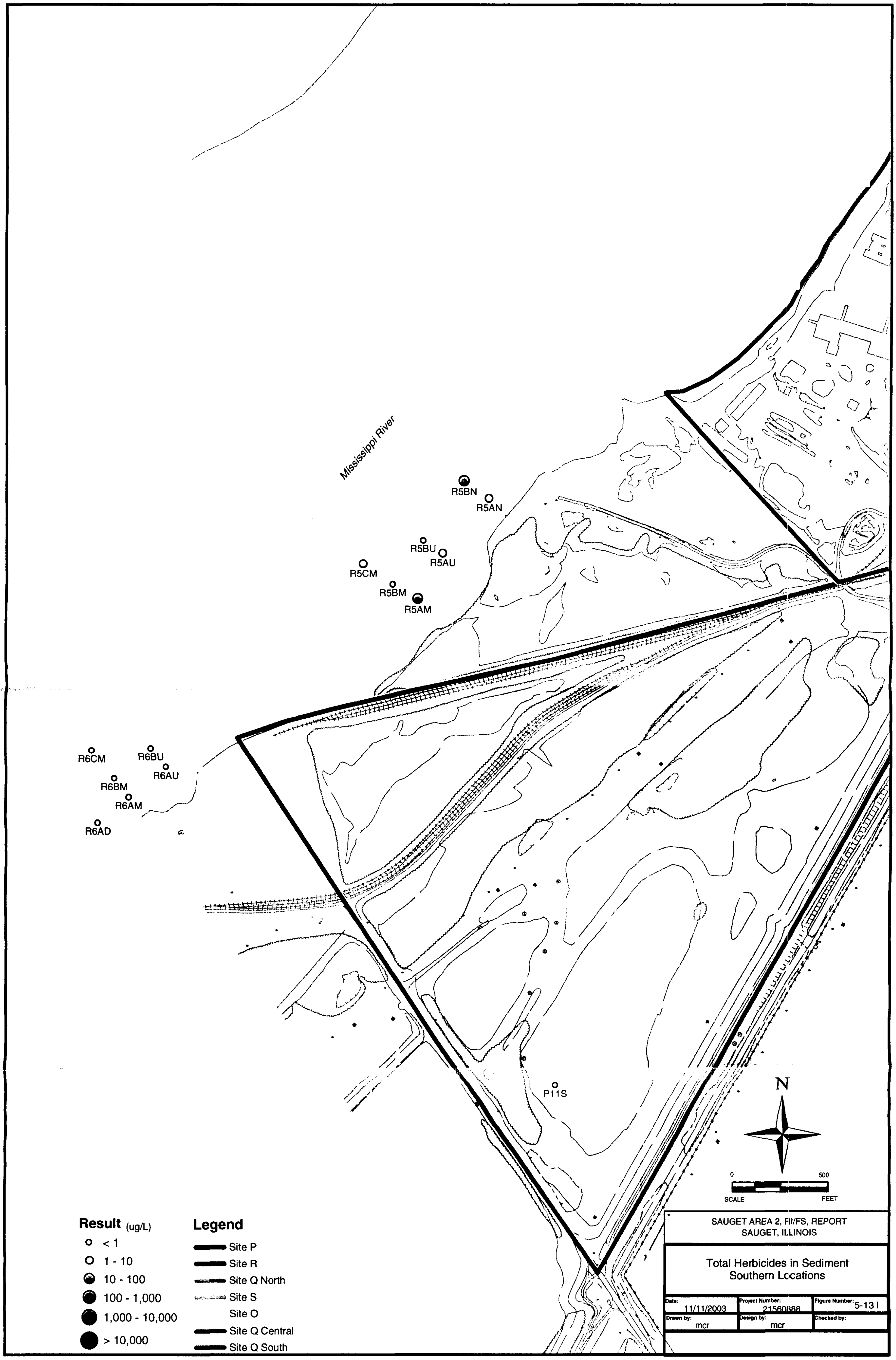
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 j
Drawn by: mcr	Design by: mcr	Checked by:



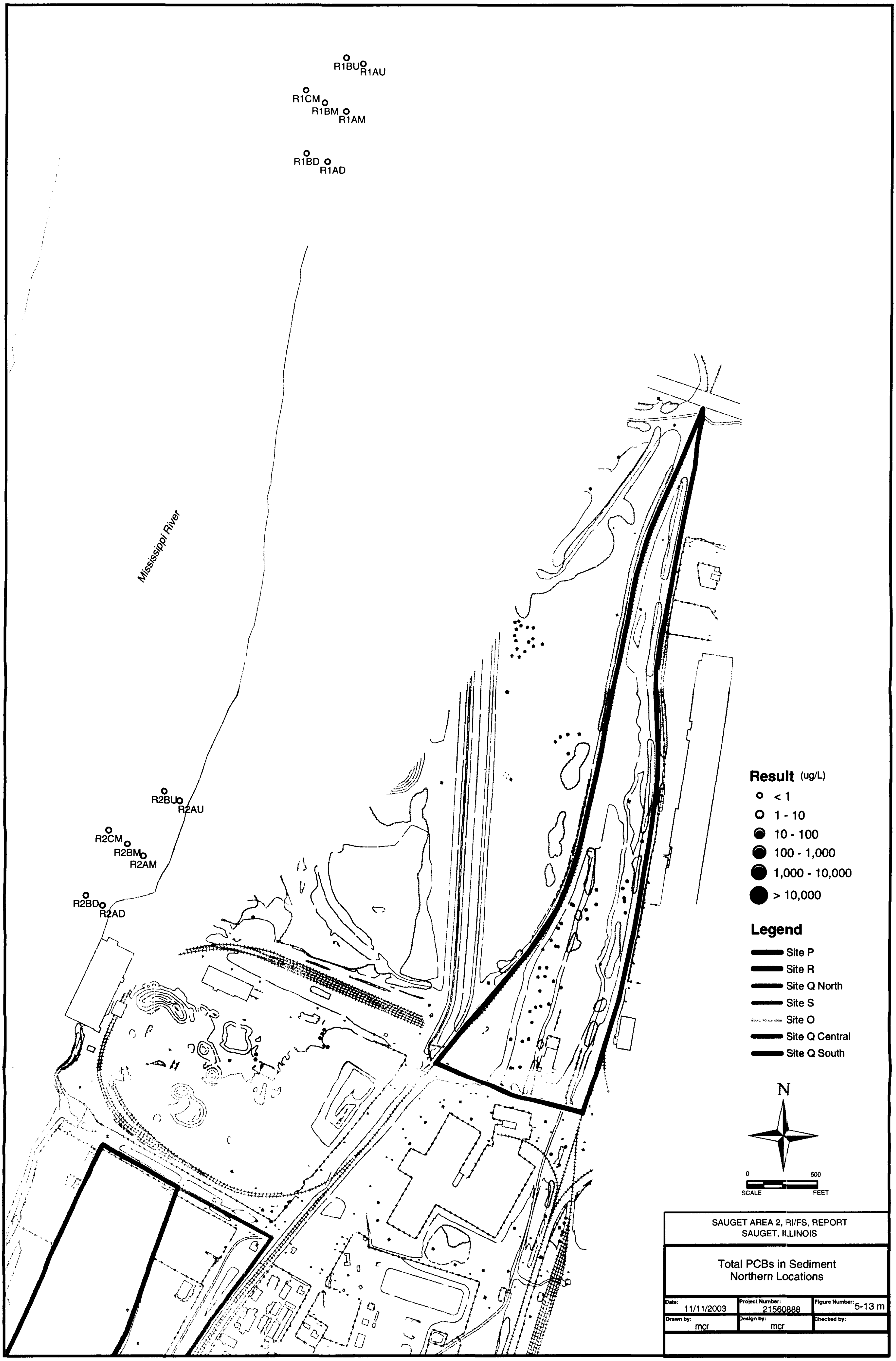
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

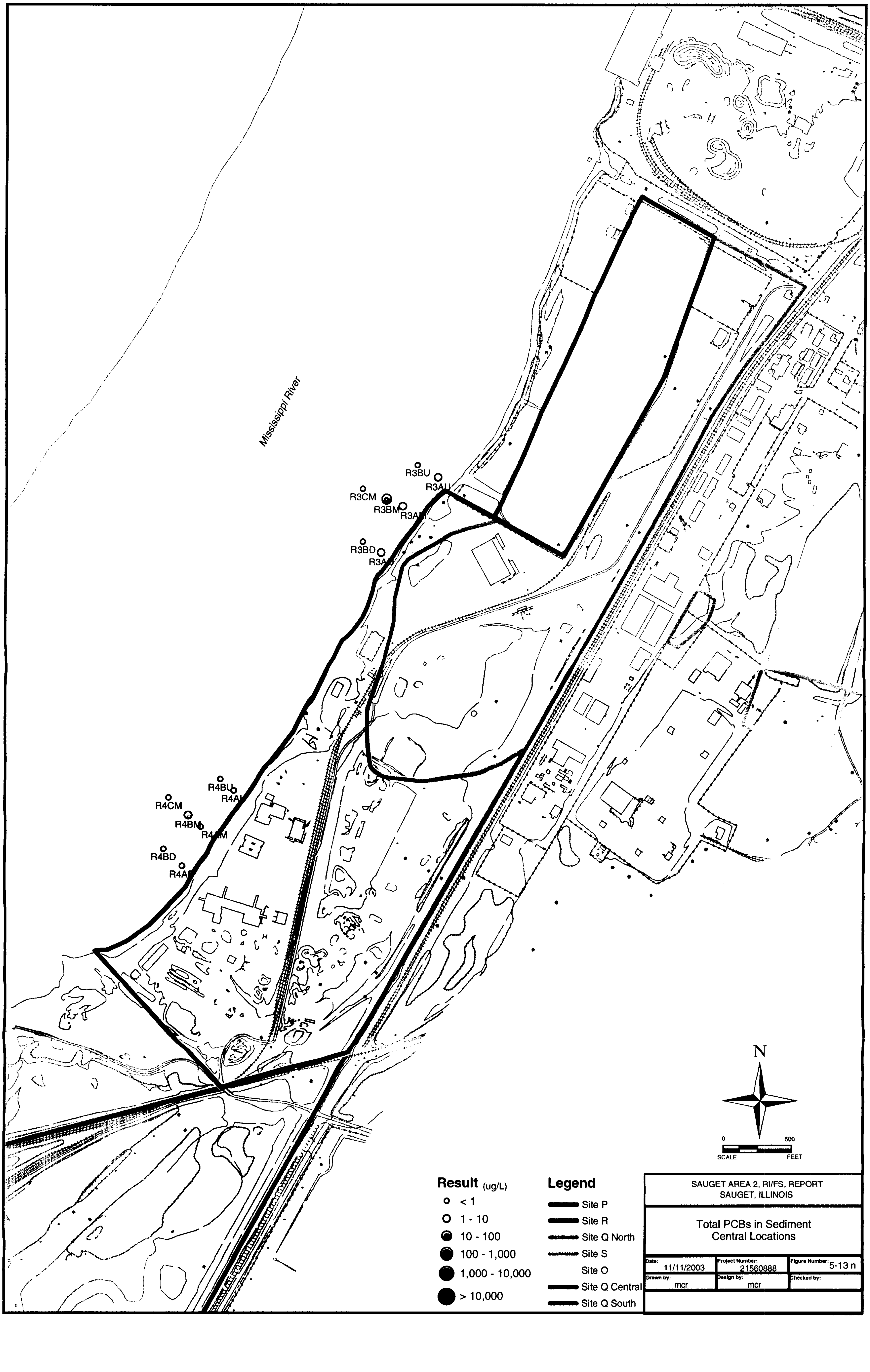
Total Herbicides in Sediment
Central Locations

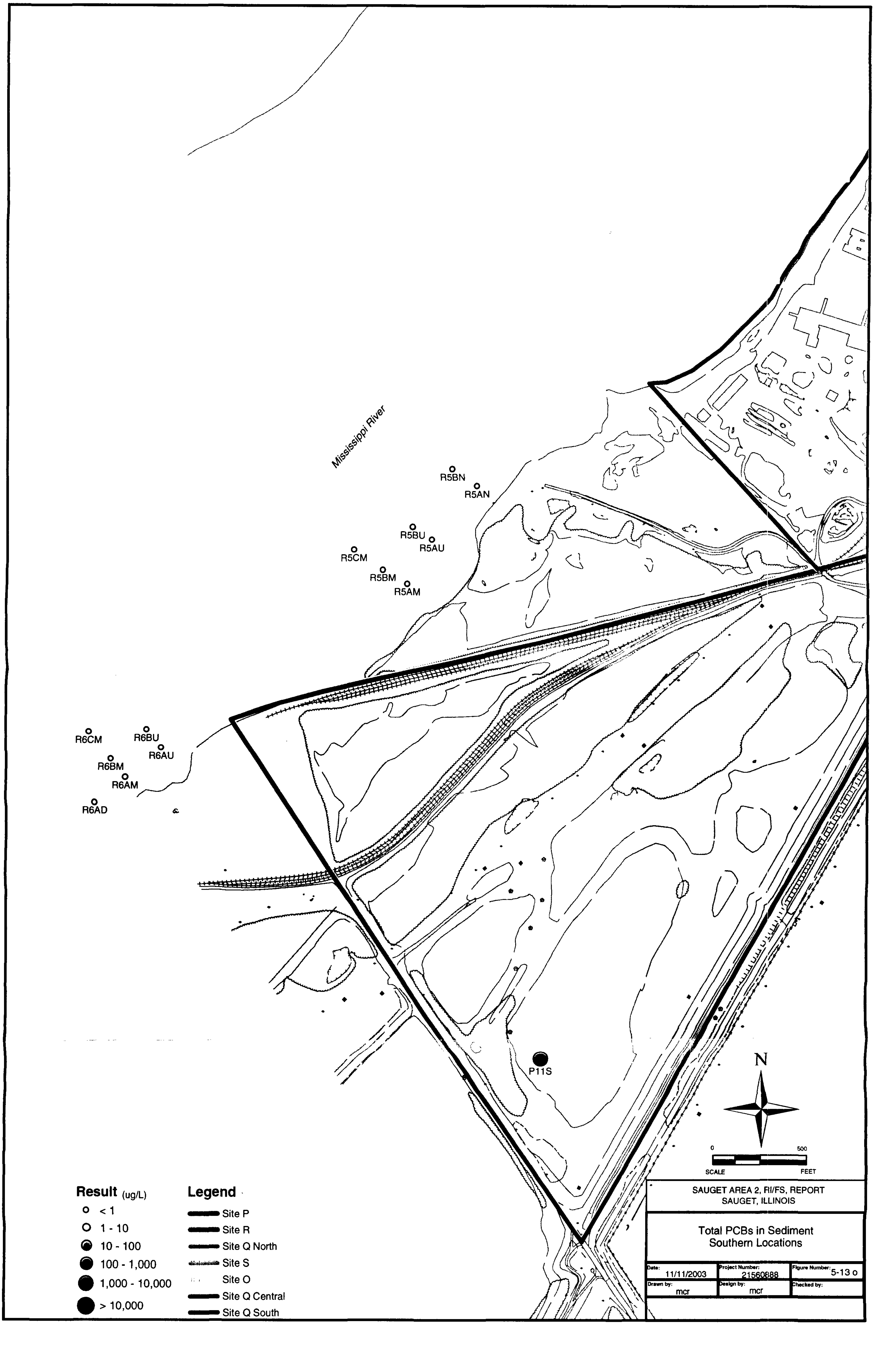
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 k
Drawn by: mcr	Design by: mcr	Checked by:



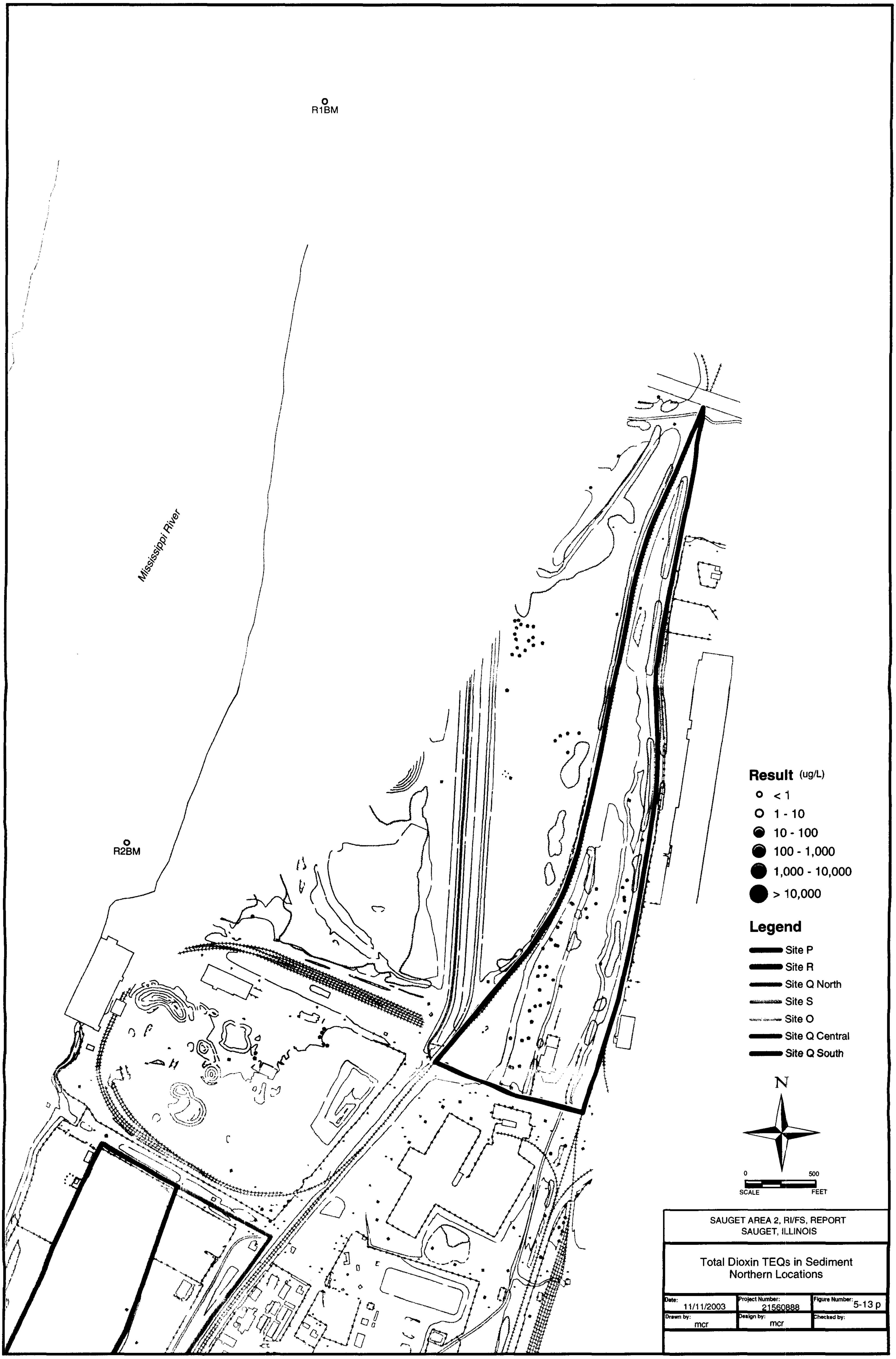
Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-131
Drawn by: mcr
Design by: mcr
Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Sediment
Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 m
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
R3BD
R3AD
R4BU
R4AU
R4CM
R4BM
R4AM
R4BD
R4AD
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560388
Figure Number: 5-13 n
Drawn by: mcr
Design by: mcr
Checked by:



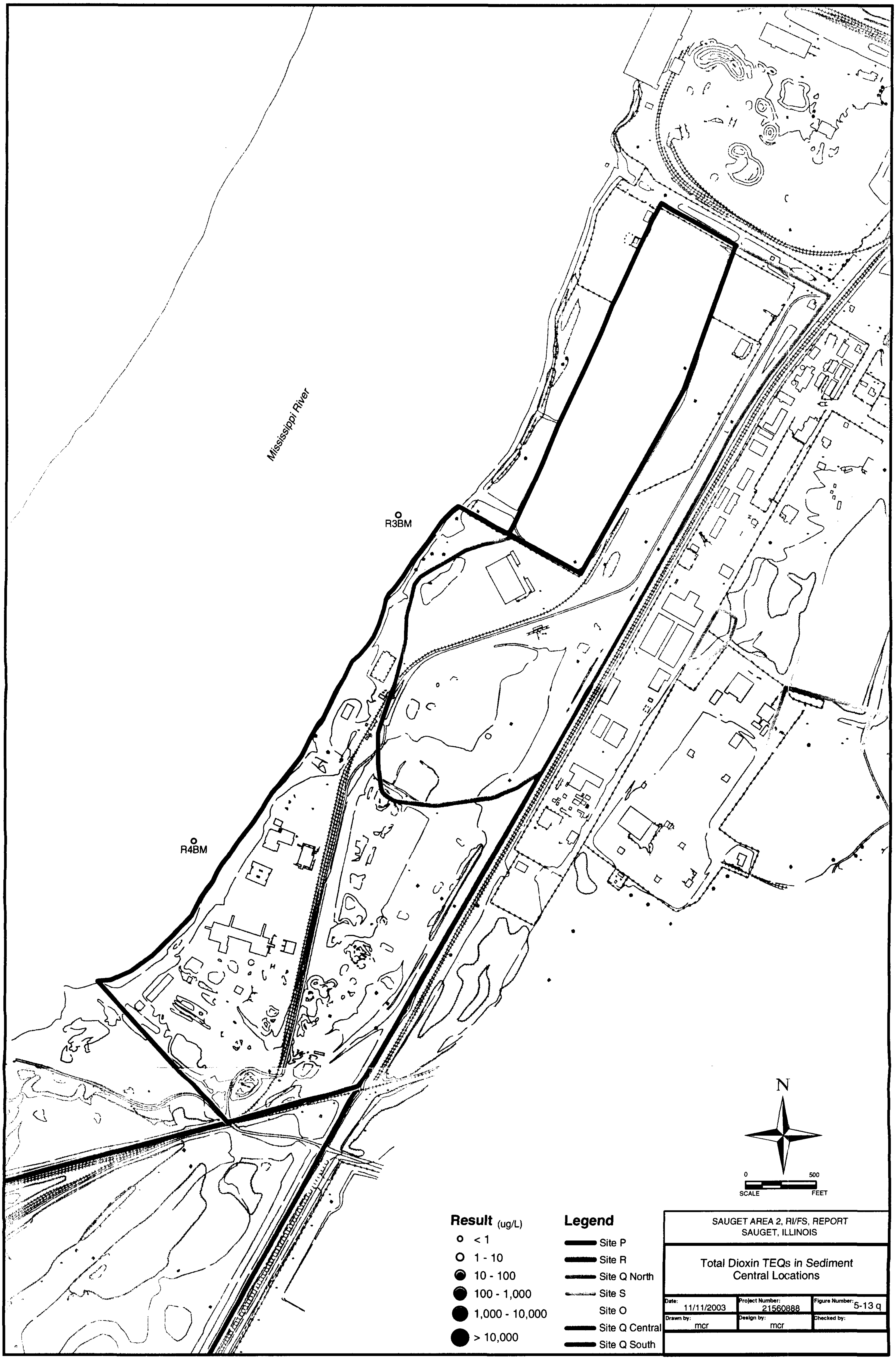
Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 o
Drawn by: mcr
Design by: mcr
Checked by:

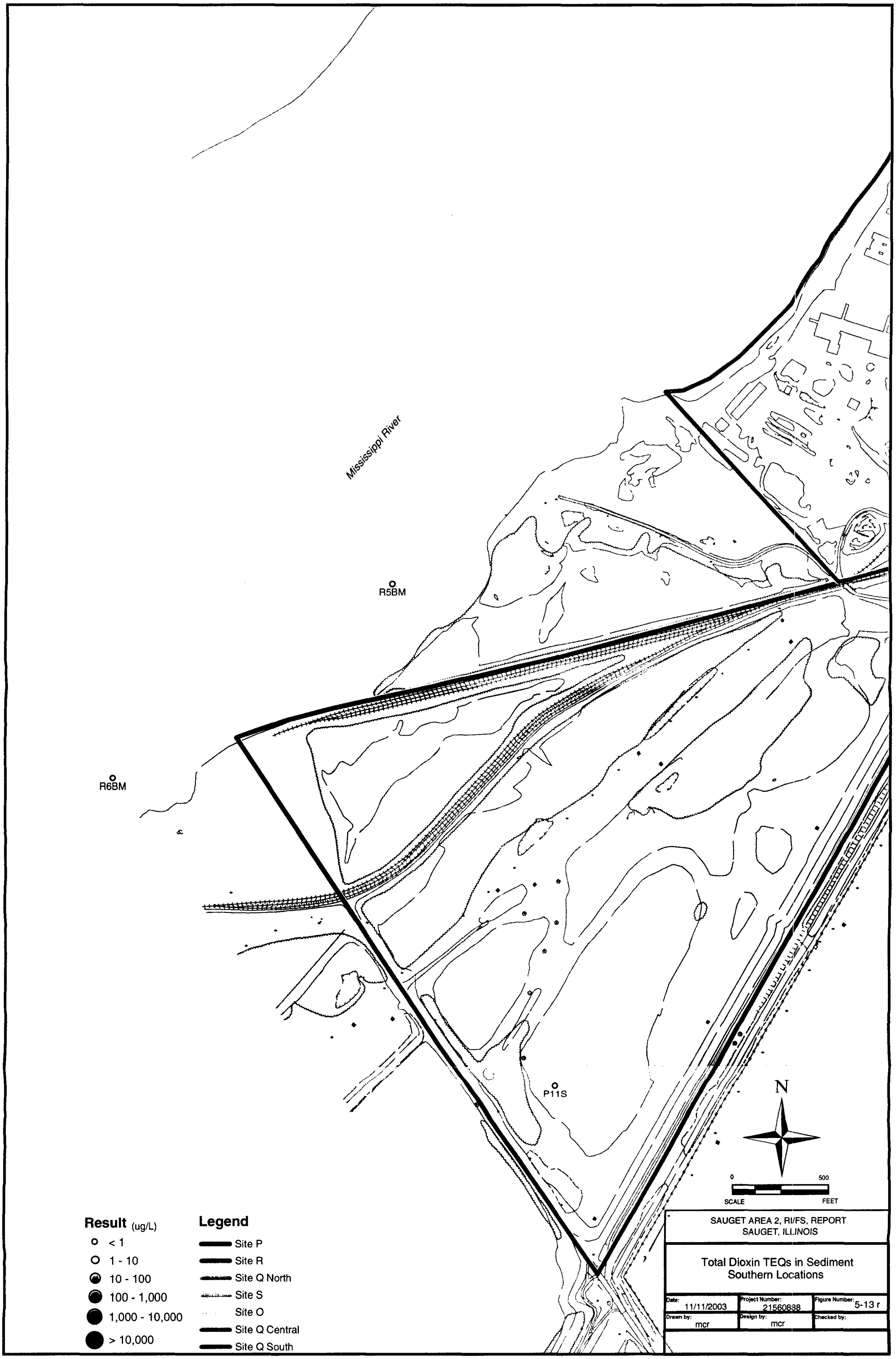


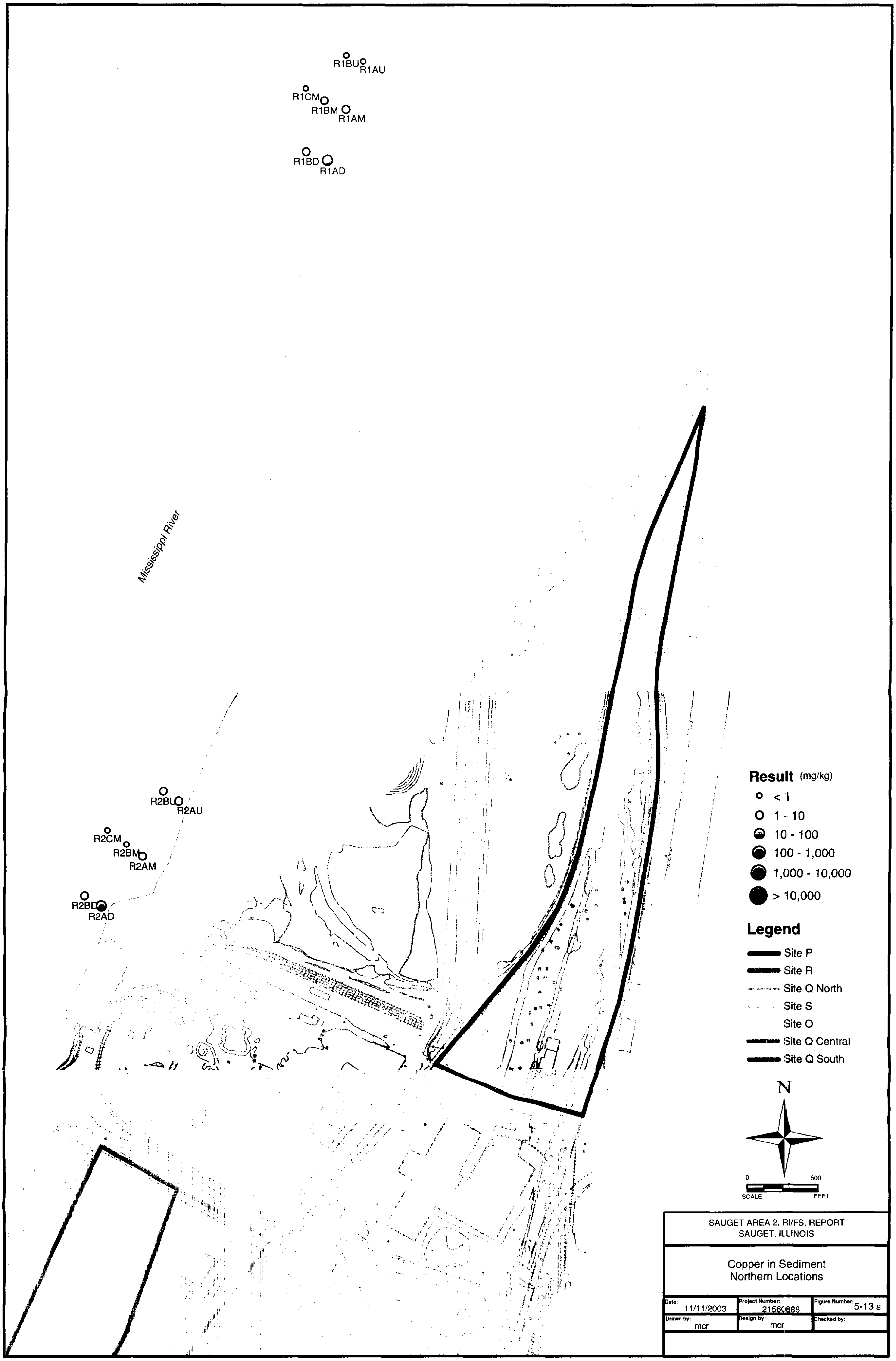
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

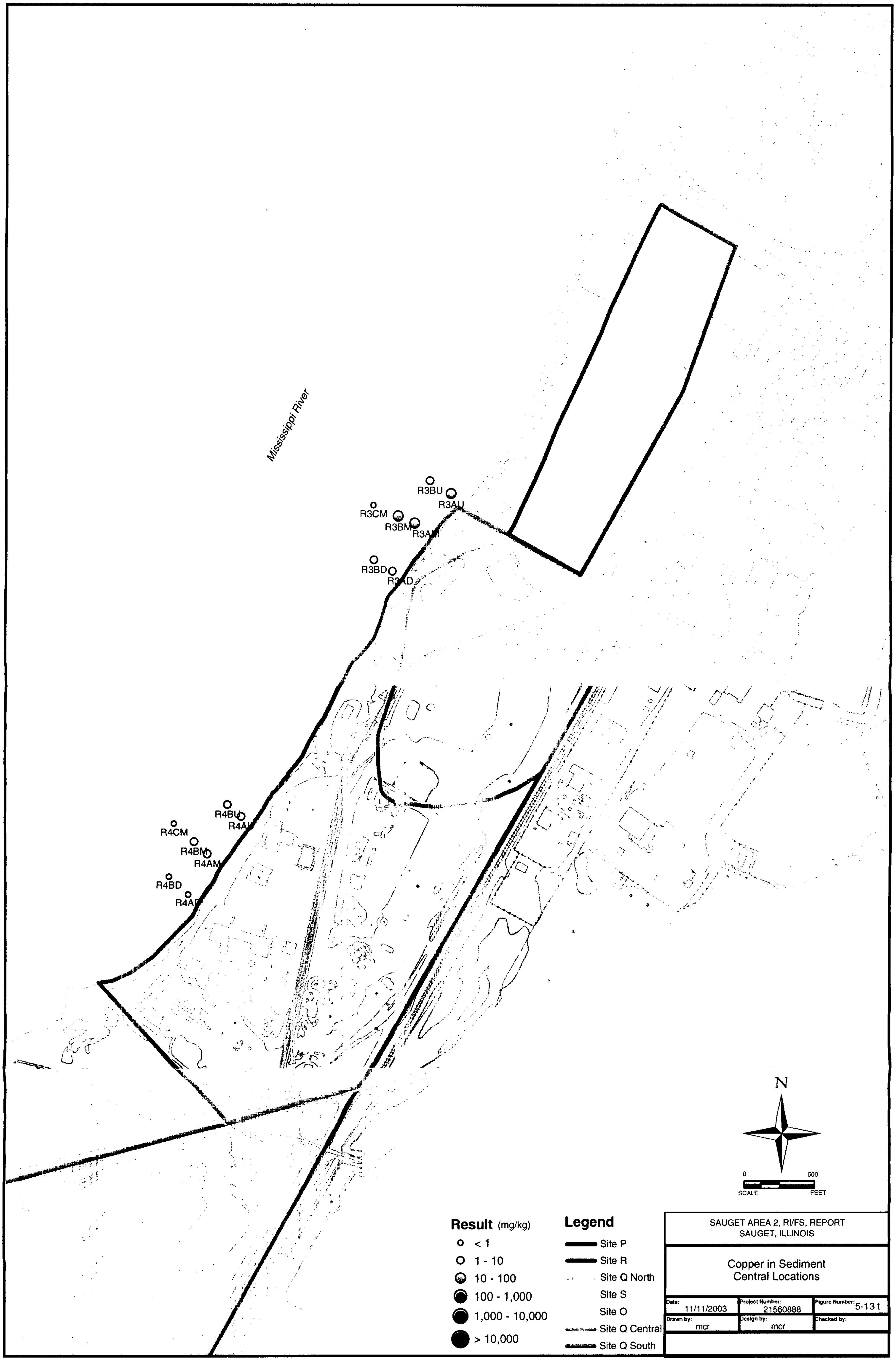
Total Dioxin TEQs in Sediment
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 p
Drawn by: mcr	Design by: mcr	Checked by:

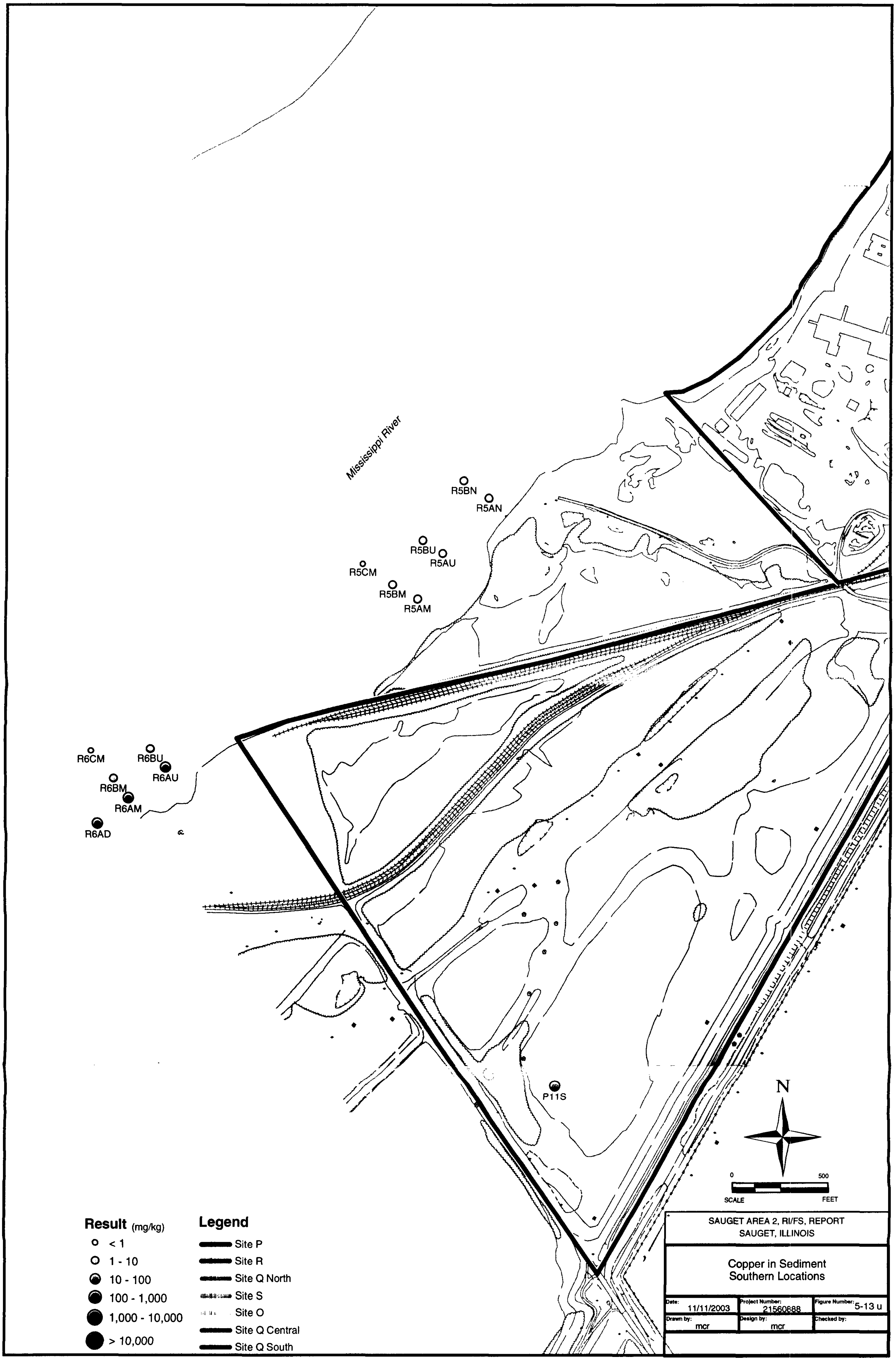

Mississippi River
R3BM
R4BM
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 q
Drawn by: mcr
Design by: mcr
Checked by:

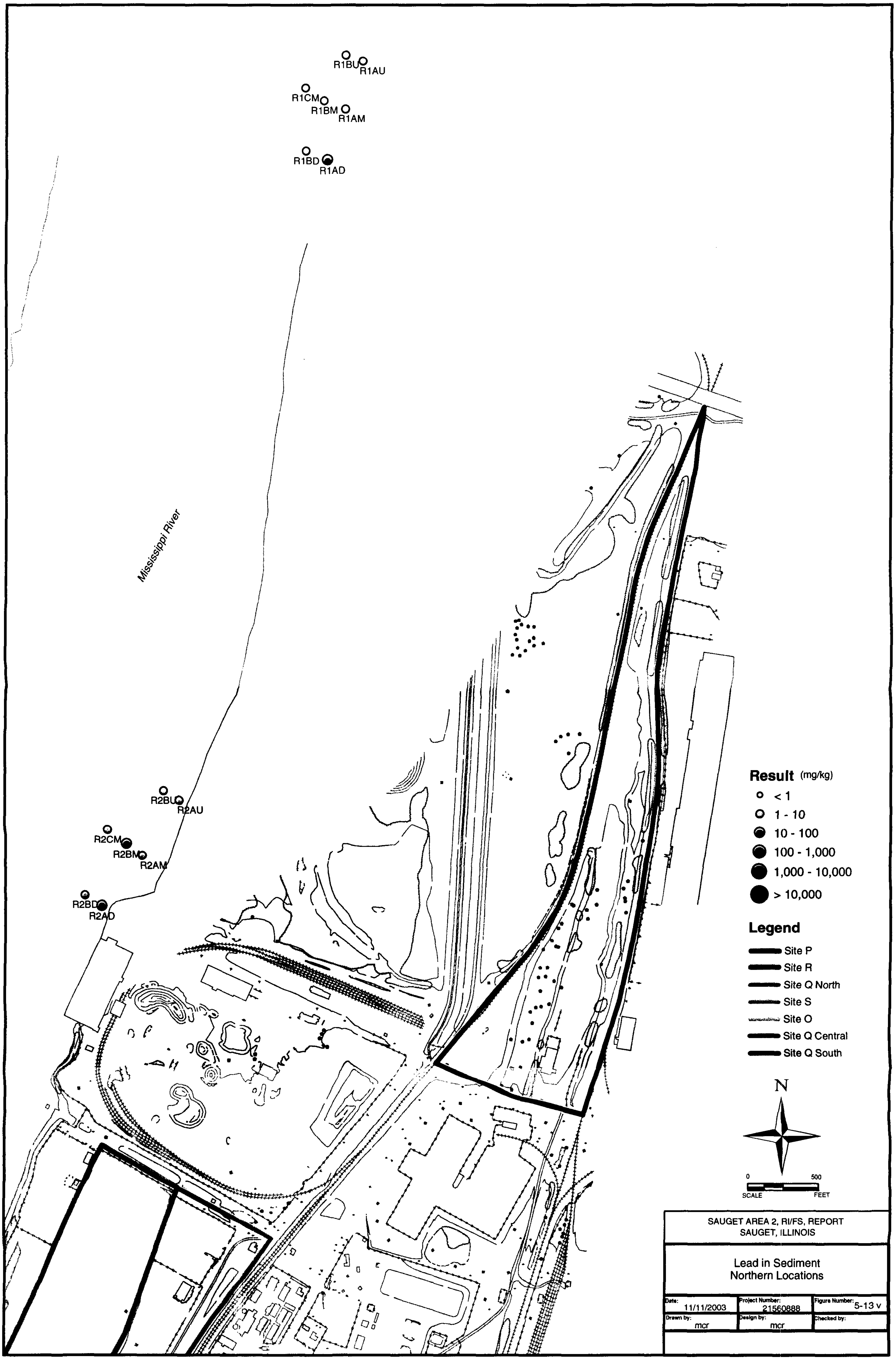

Mississippi River
R5BM
R6BM
P11S
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 r
Drawn by: mcr
Design by: mcr
Checked by:

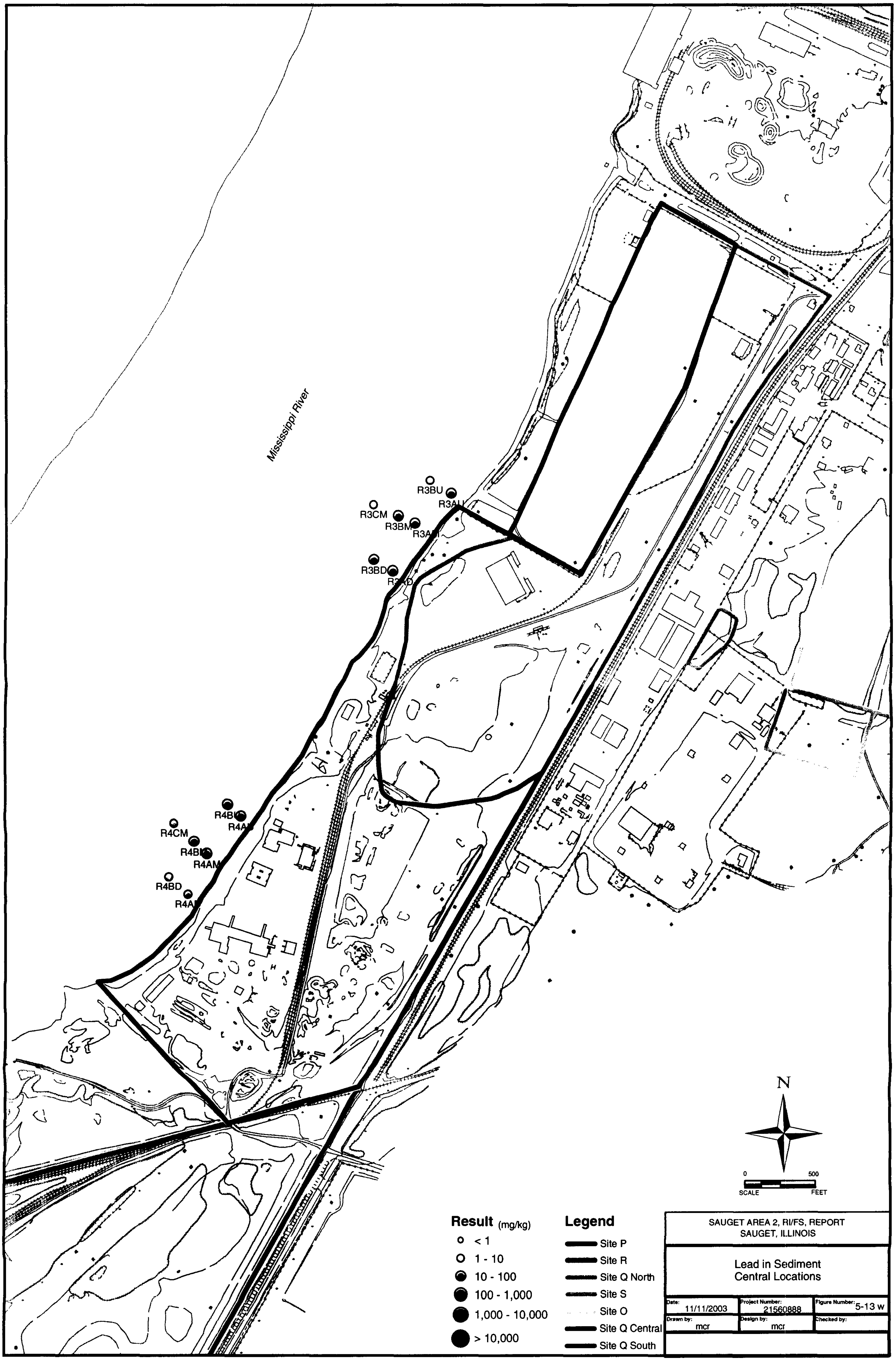

R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Sediment
Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 s
Drawn by: mcr
Design by: mcr
Checked by:

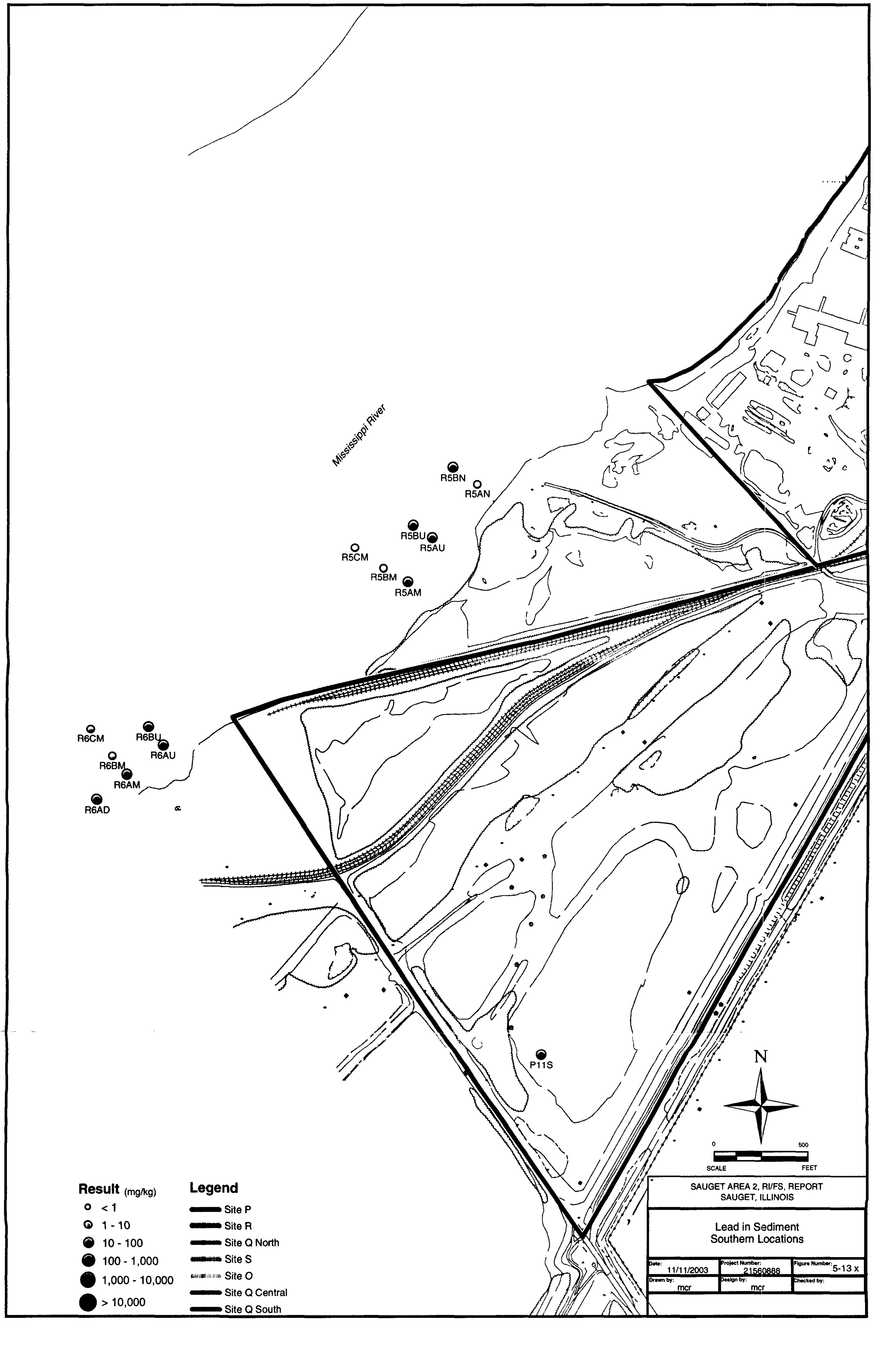


Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
R3BD
R3AD
R4BU
R4AU
R4CM
R4BM
R4AM
R4BD
R4AD
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 t
Drawn by: mcr
Design by: mcr
Checked by:

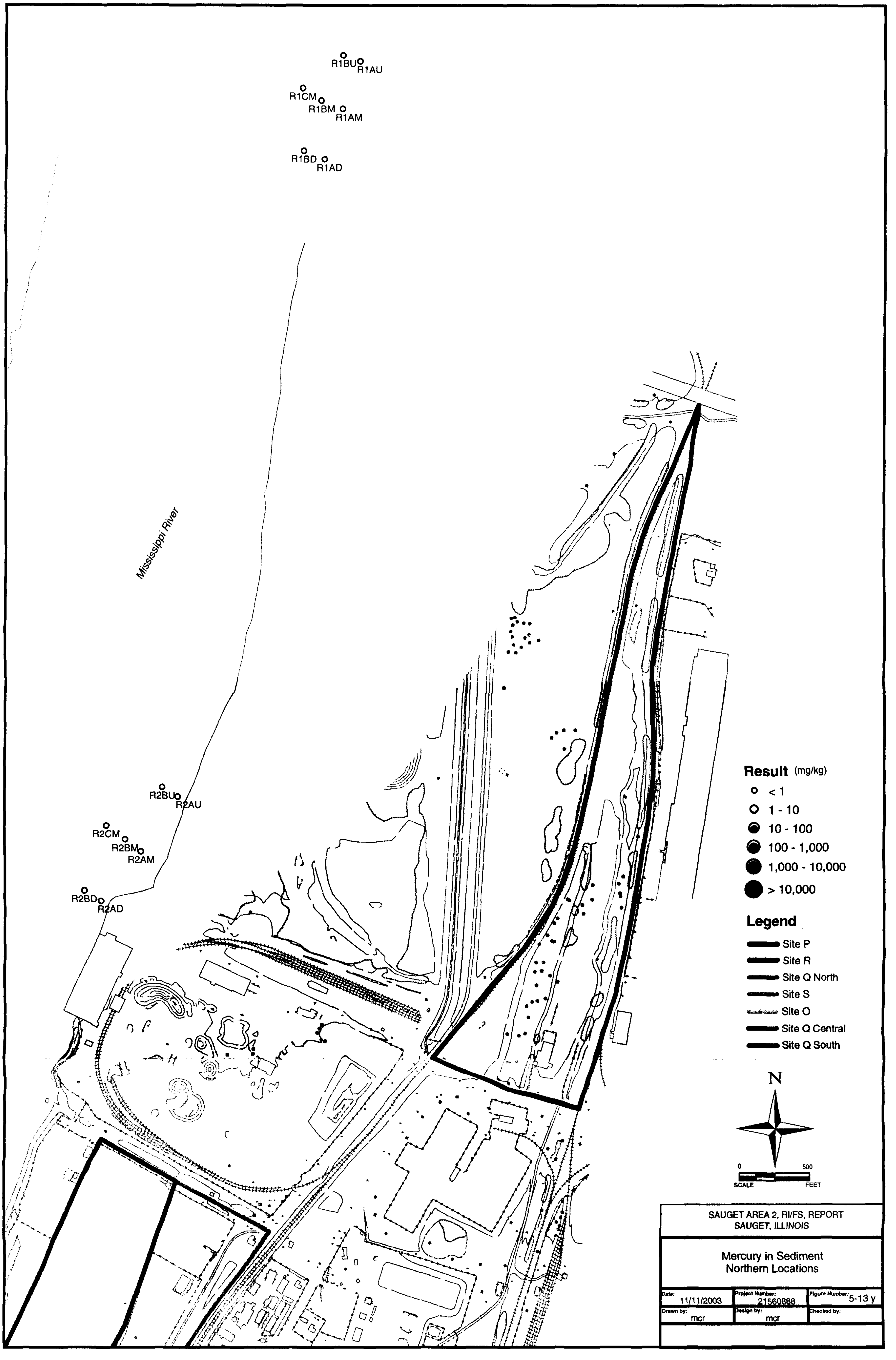

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560688
Figure Number: 5-13 u
Drawn by: mcr
Design by: mcr
Checked by:

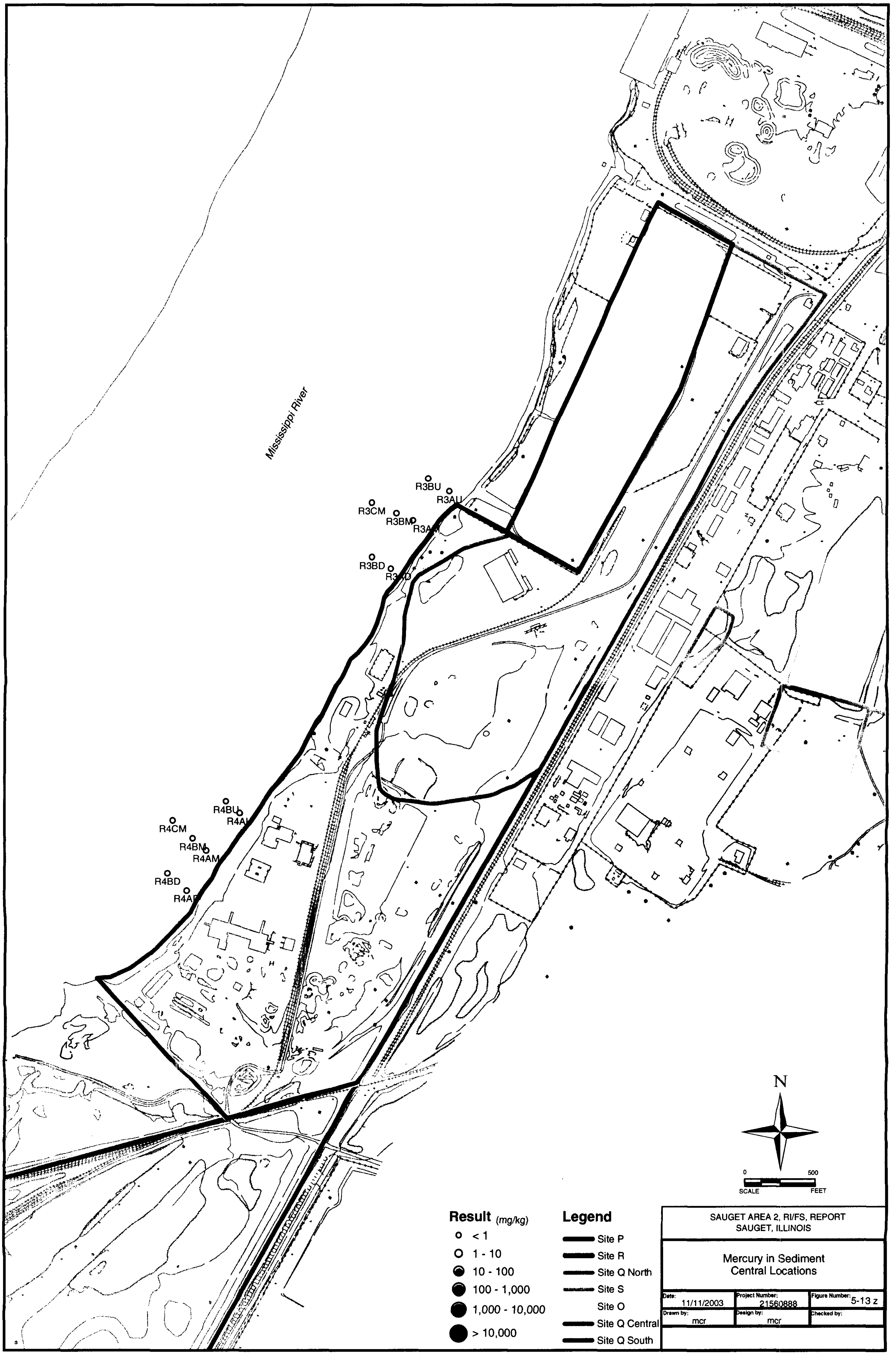

R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Sediment
Northern Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-13 v
Drawn by:
mcr
Design by:
mcr
Checked by:

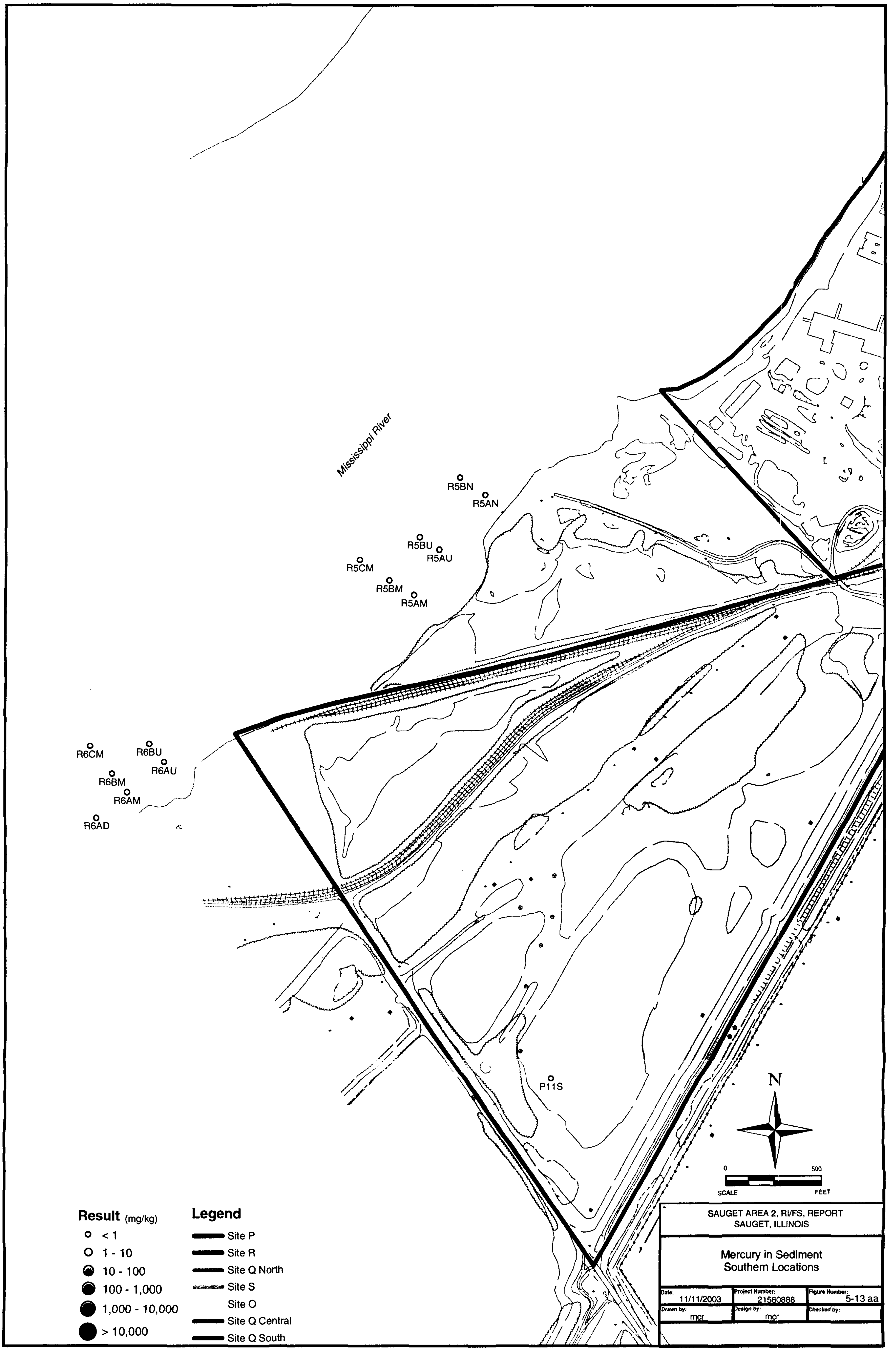

Mississippi River
R3BU
R3CM
R3BM
R3BD
R4CM
R4BD
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Lead in Sediment
Central Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-13 w
Drawn by:
mcr
Design by:
mcr
Checked by:



SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Lead in Sediment Southern Locations		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 x
Drawn by: mcr	Design by: mcr	Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Sediment
Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 y
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
R3BD
R3AD
R4BU
R4AU
R4CM
R4BM
R4AM
R4BD
R4AD
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 z
Drawn by: mcr
Design by: mcr
Checked by:



Result (mg/kg)

- < 1
- 1 - 10
- 10 - 100
- 100 - 1,000
- 1,000 - 10,000
- > 10,000

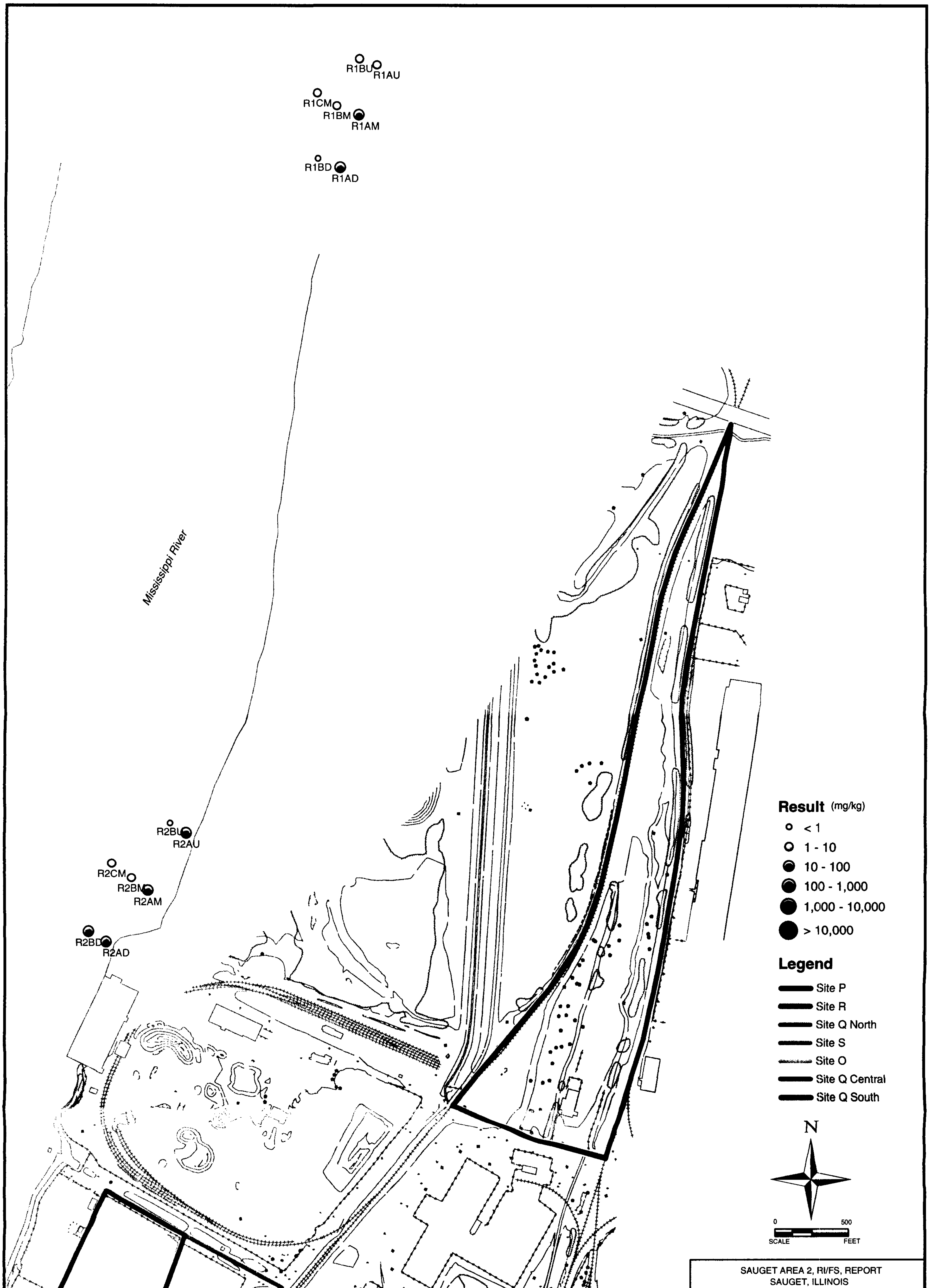
Legend

- Site P
- Site R
- Site Q North
- Site S
- Site O
- Site Q Central
- Site Q South

SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Mercury in Sediment
Southern Locations

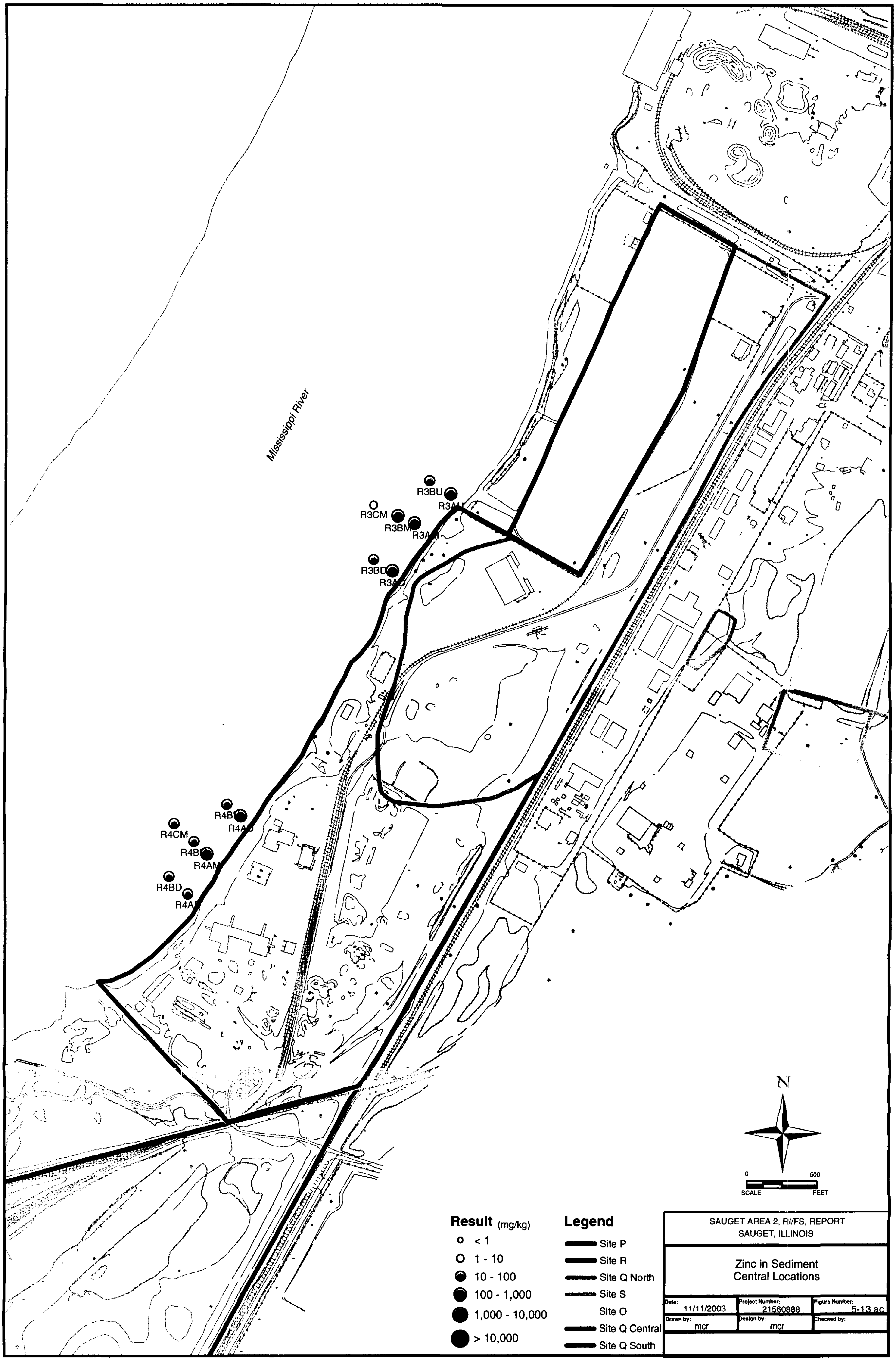
Date:	Project Number:	Figure Number:
11/11/2003	21560888	5-13 aa
Drawn by: mcr	Design by: mcr	Checked by:

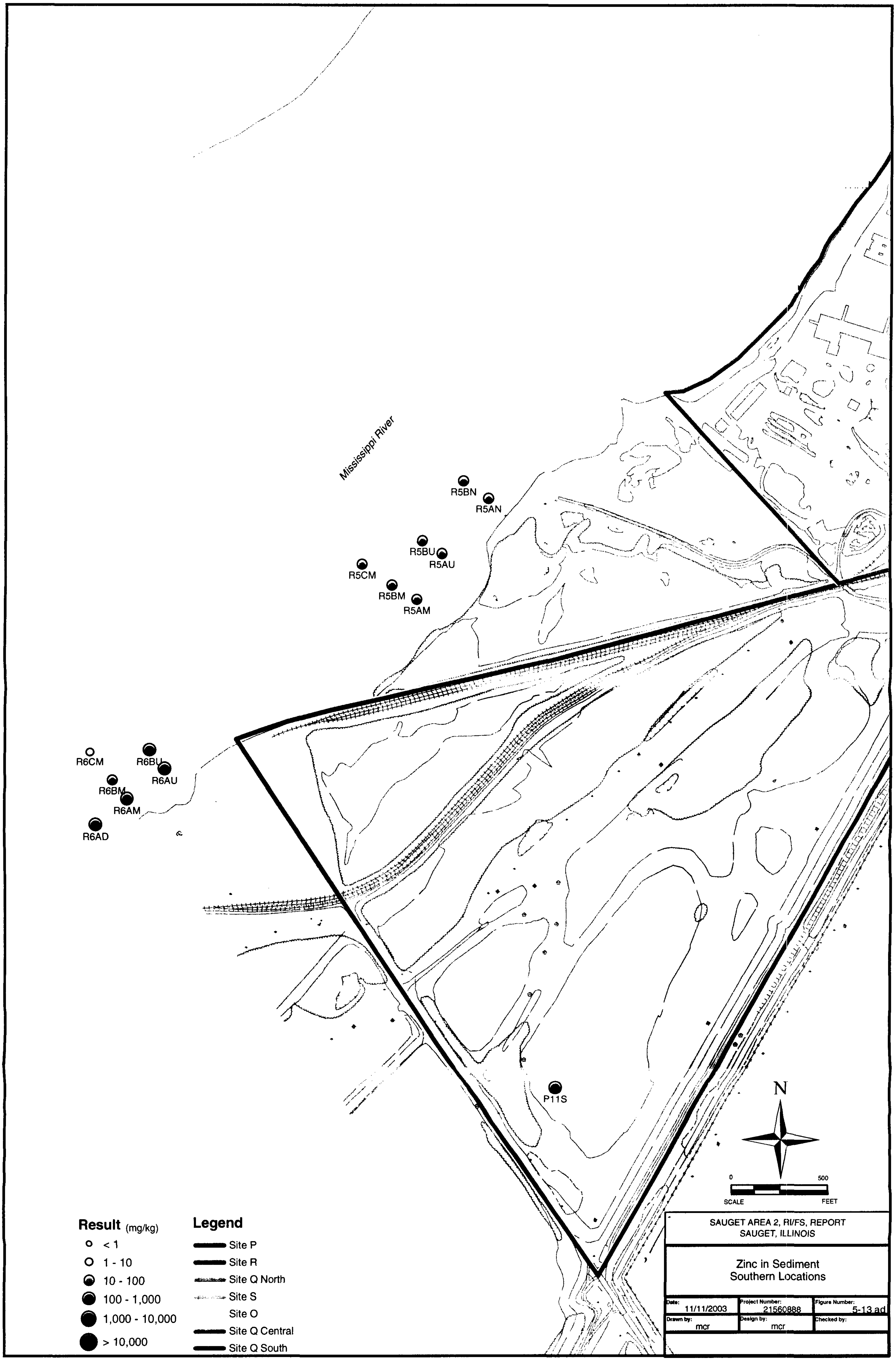


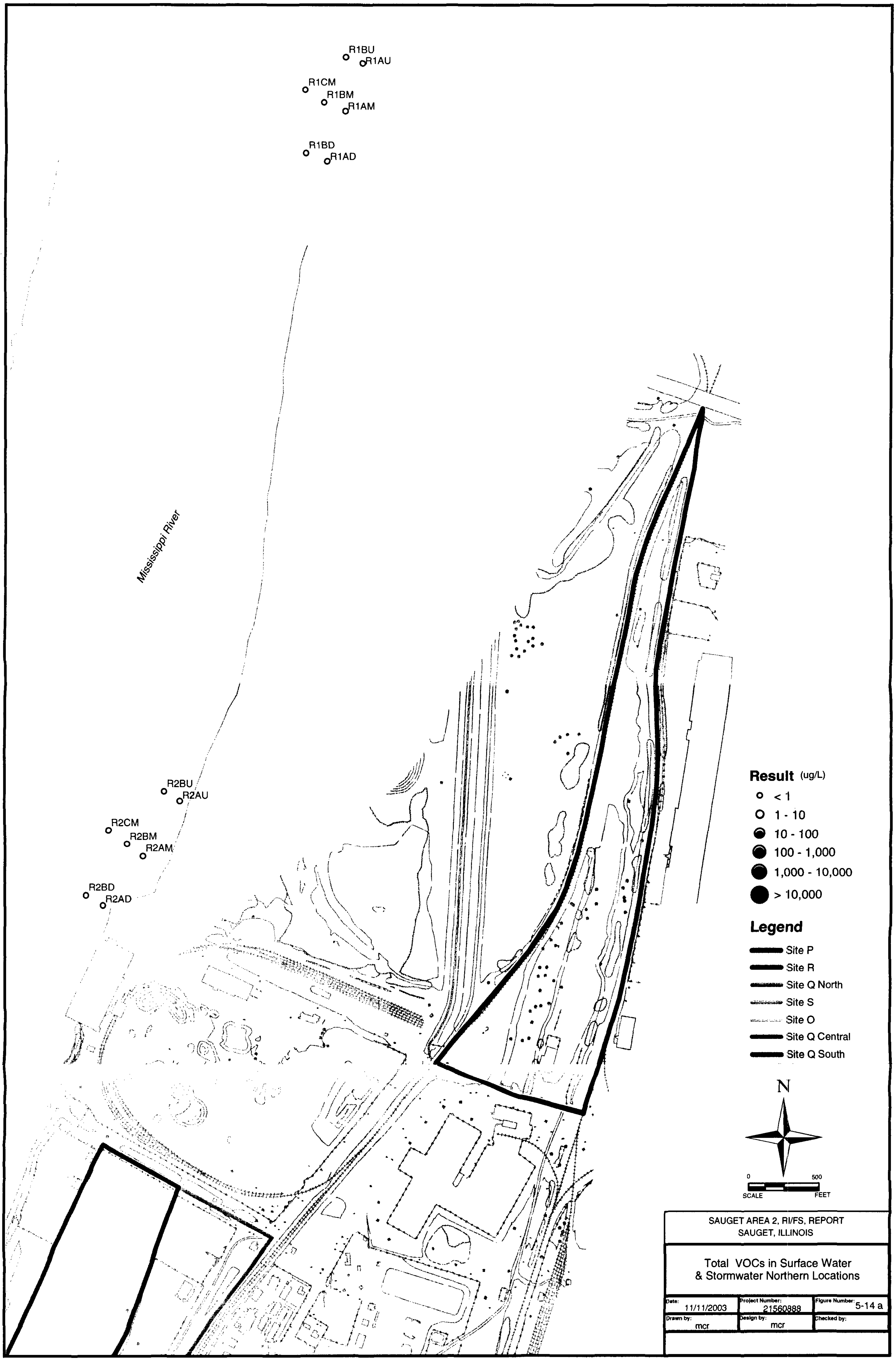
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Zinc in Sediment
Northern Locations

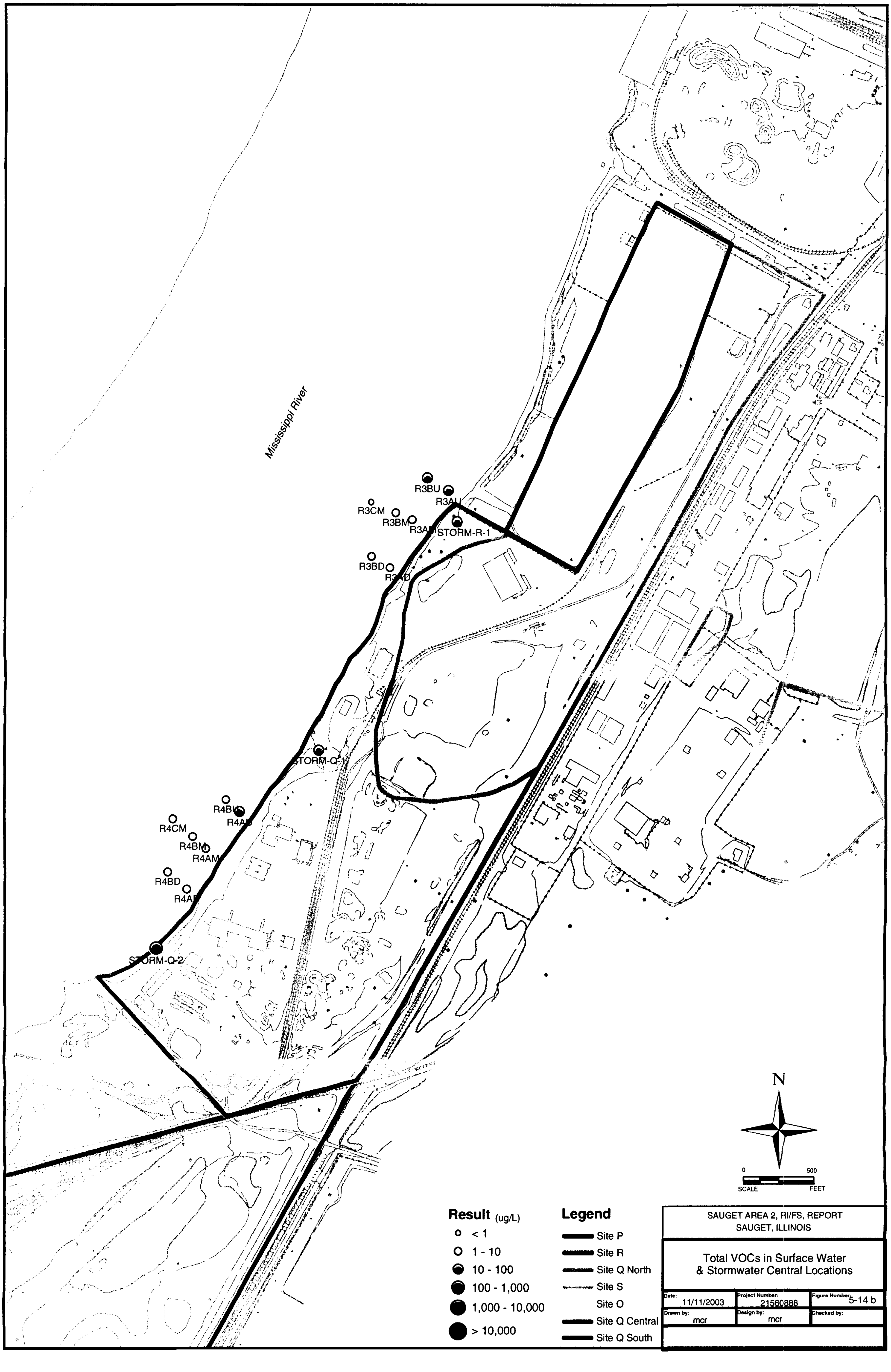
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-13 ab
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
R3BU
R3CM
R3BM
R3BD
R4CM
R4AM
R4BD
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Sediment
Central Locations
Date: 11/11/2003
Project Number: 21560388
Figure Number: 5-13 ac
Drawn by: mcr
Design by: mcr
Checked by:

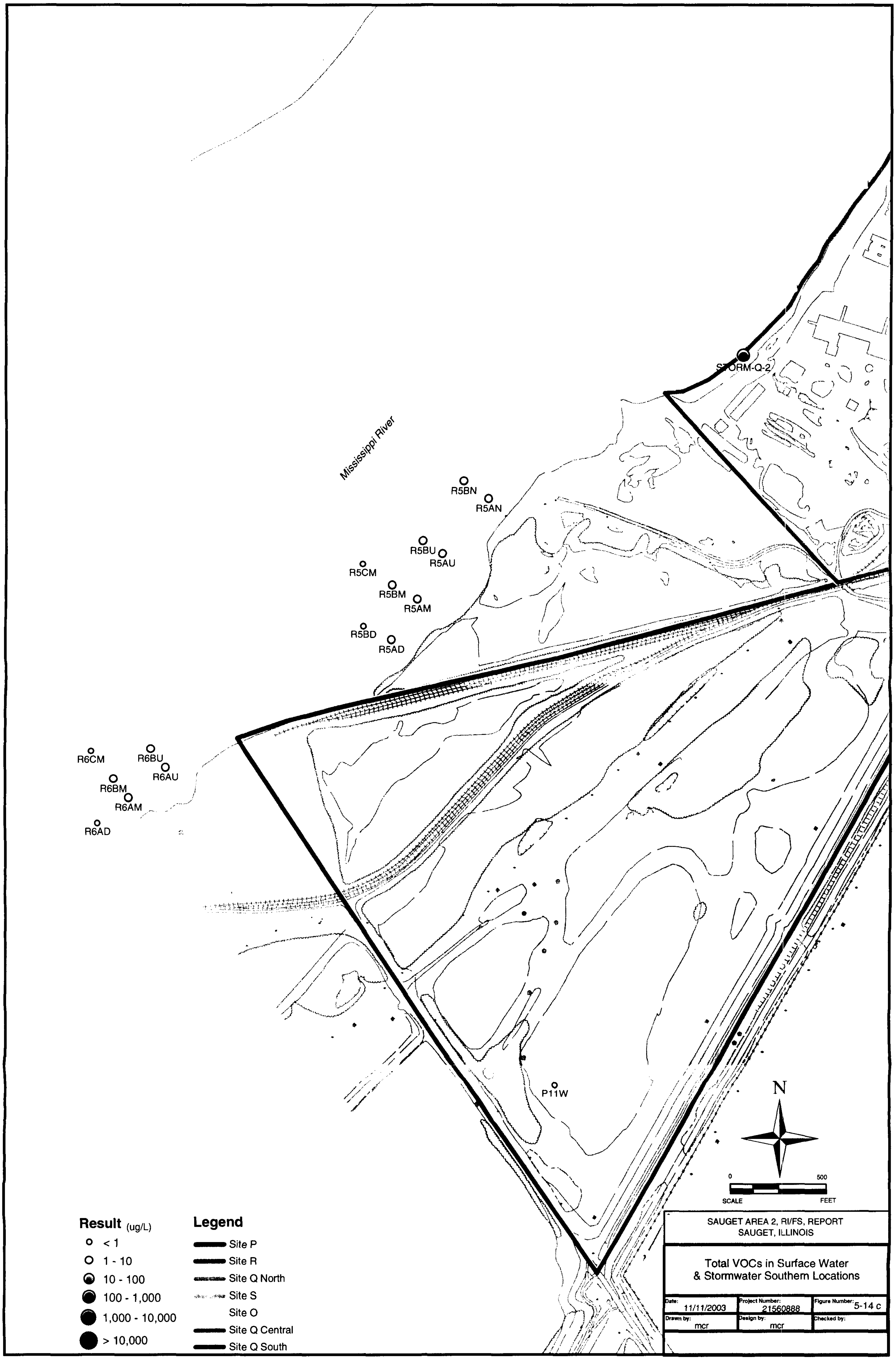

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11S
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Sediment
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-13 ad
Drawn by: mcr
Design by: mcr
Checked by:

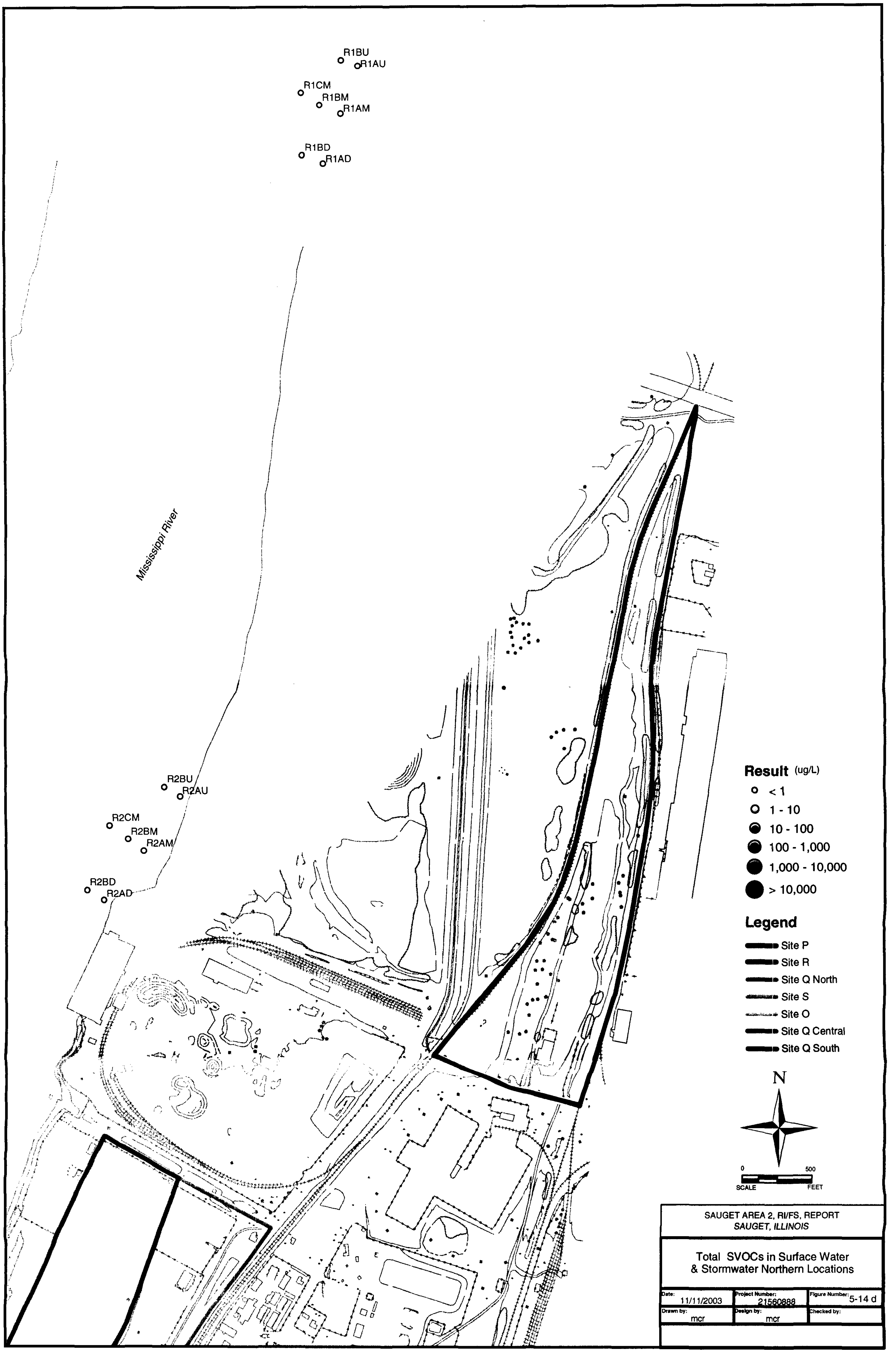


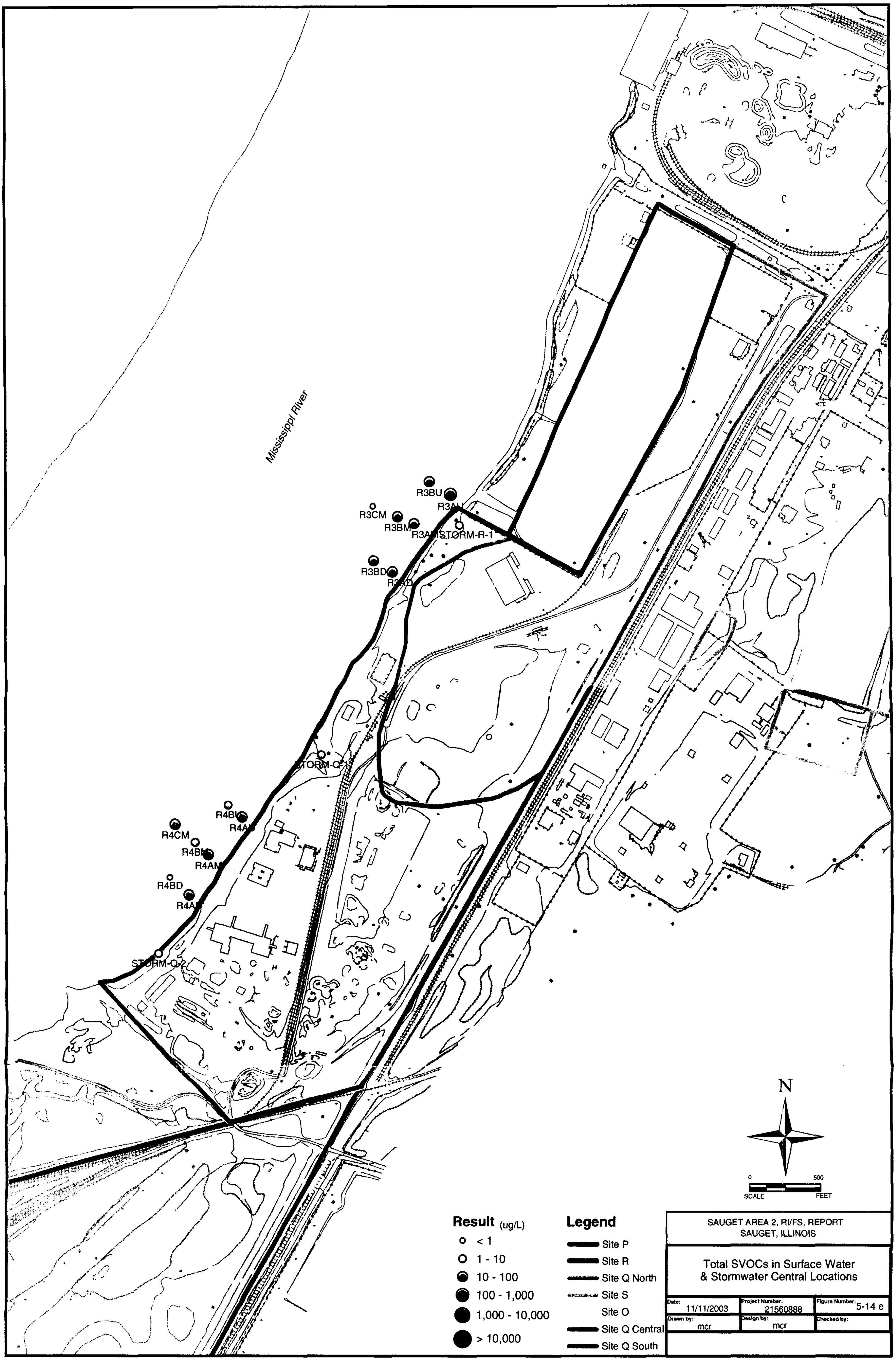
R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Surface Water
& Stormwater Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 a
Drawn by: mcr
Design by: mcr
Checked by:

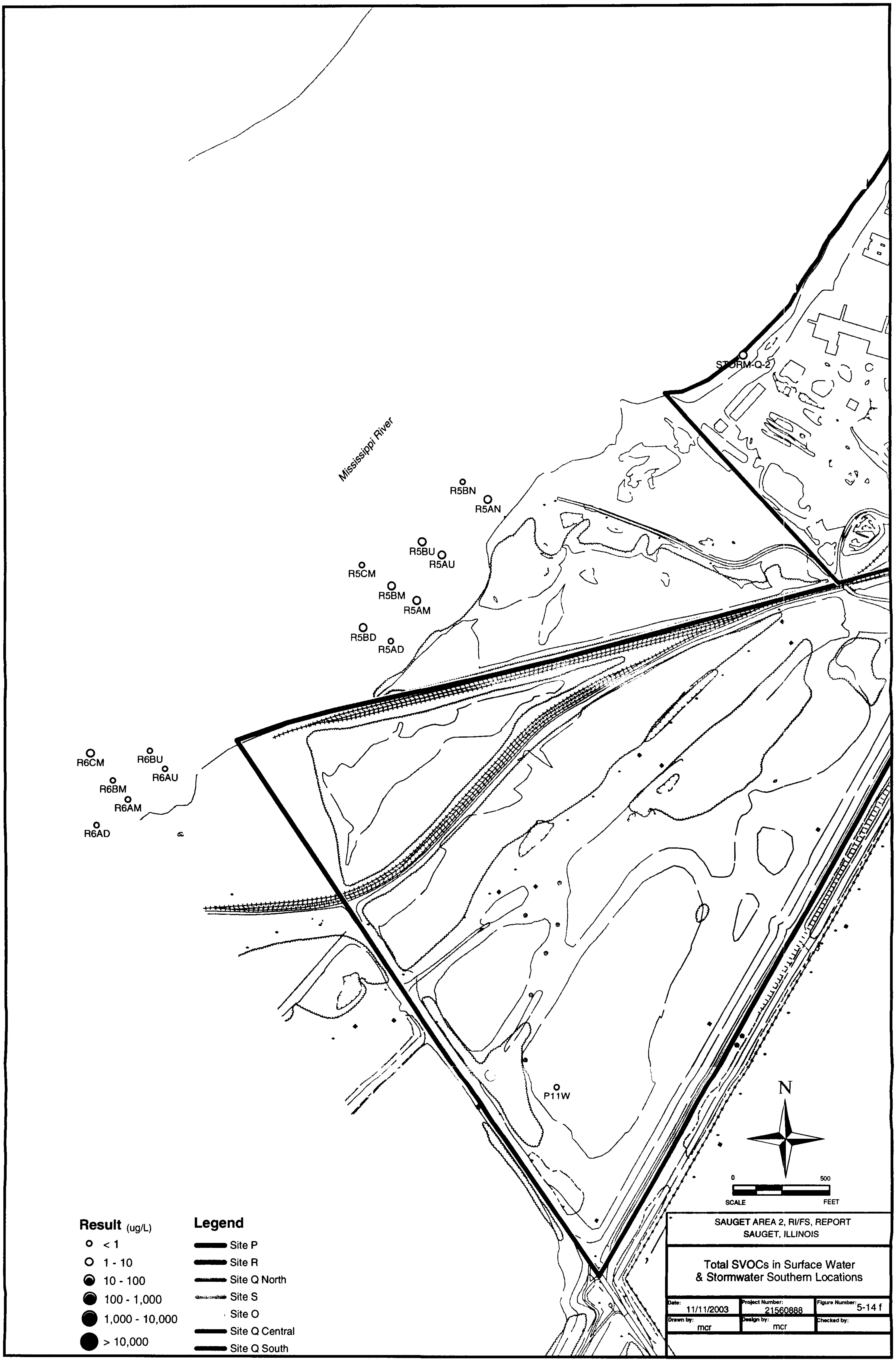


SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Total VOCs in Surface Water & Stormwater Central Locations		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 b
Drawn by: mcr	Design by: mcr	Checked by:


Mississippi River
STORM-Q-2
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11W
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total VOCs in Surface Water
& Stormwater Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 c
Drawn by: mcr
Design by: mcr
Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Surface Water
& Stormwater Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 d
Drawn by: mcr
Design by: mcr
Checked by:

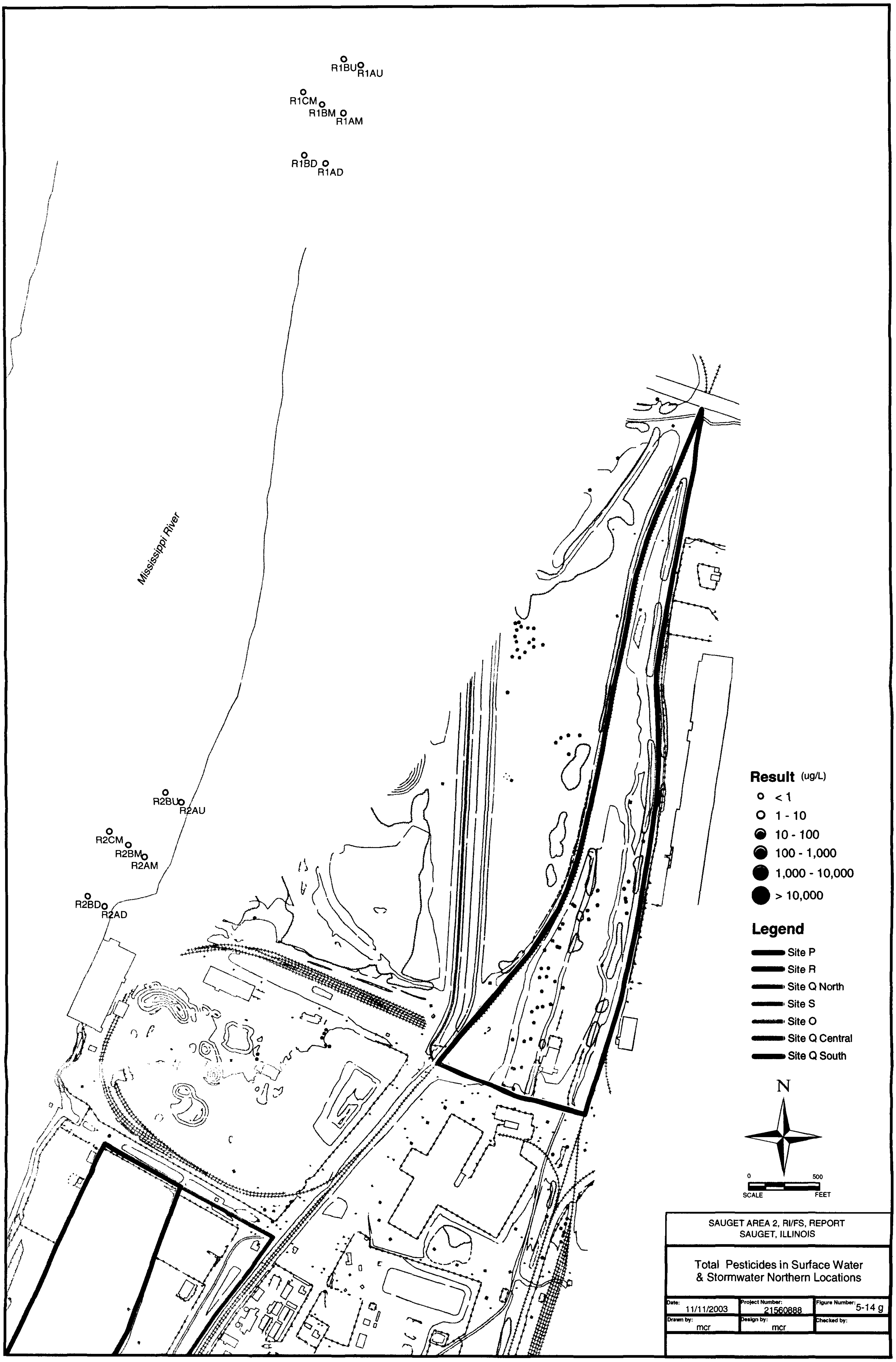

Mississippi River
R3BU
R3CM
R3BM
STORM-R-1
R3BD
STORM-Q-1
R4CM
R4BD
STORM-Q-2
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total SVOCs in Surface Water
& Stormwater Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 e
Drawn by: mcr
Design by: mcr
Checked by:

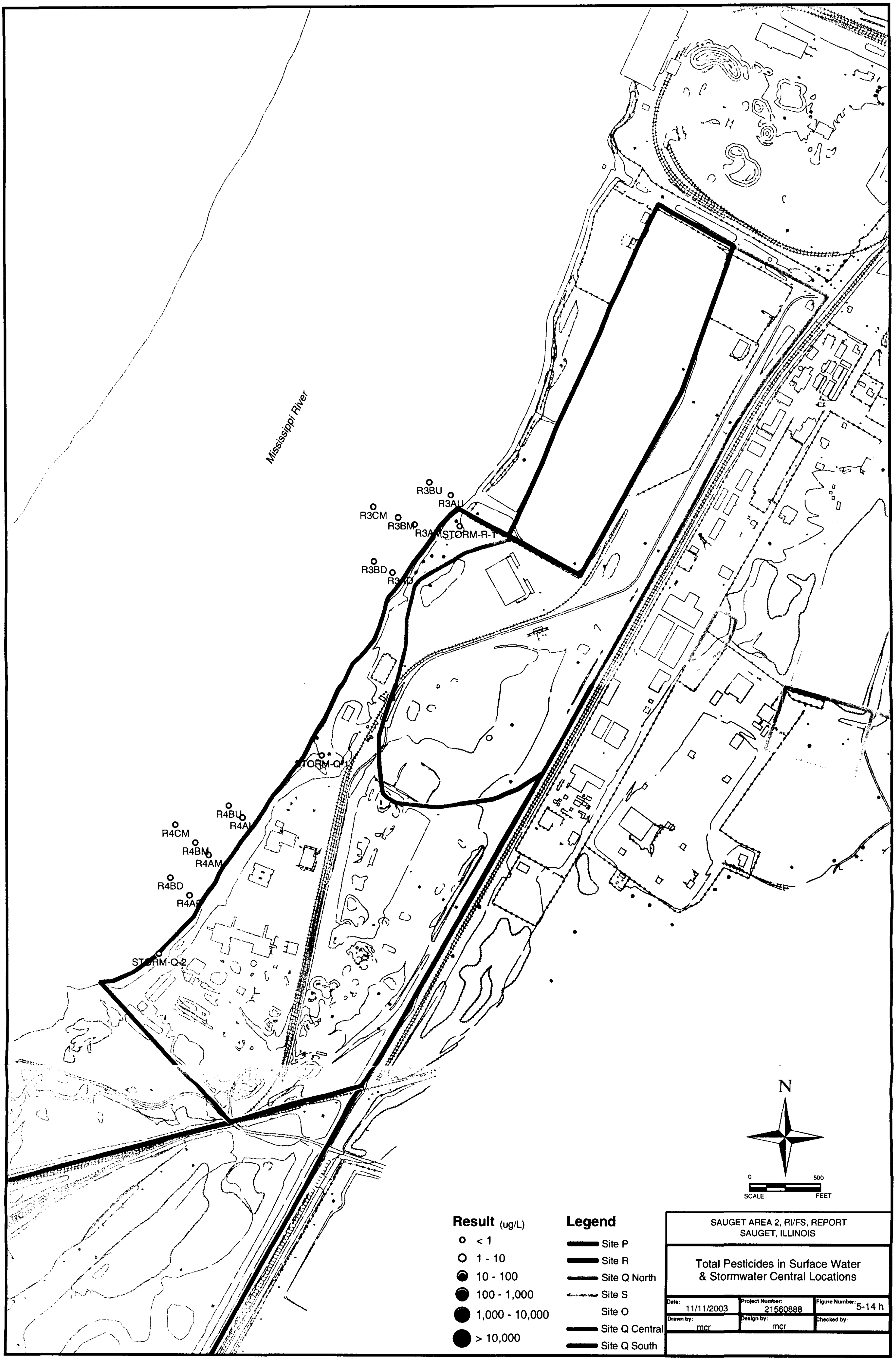


SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

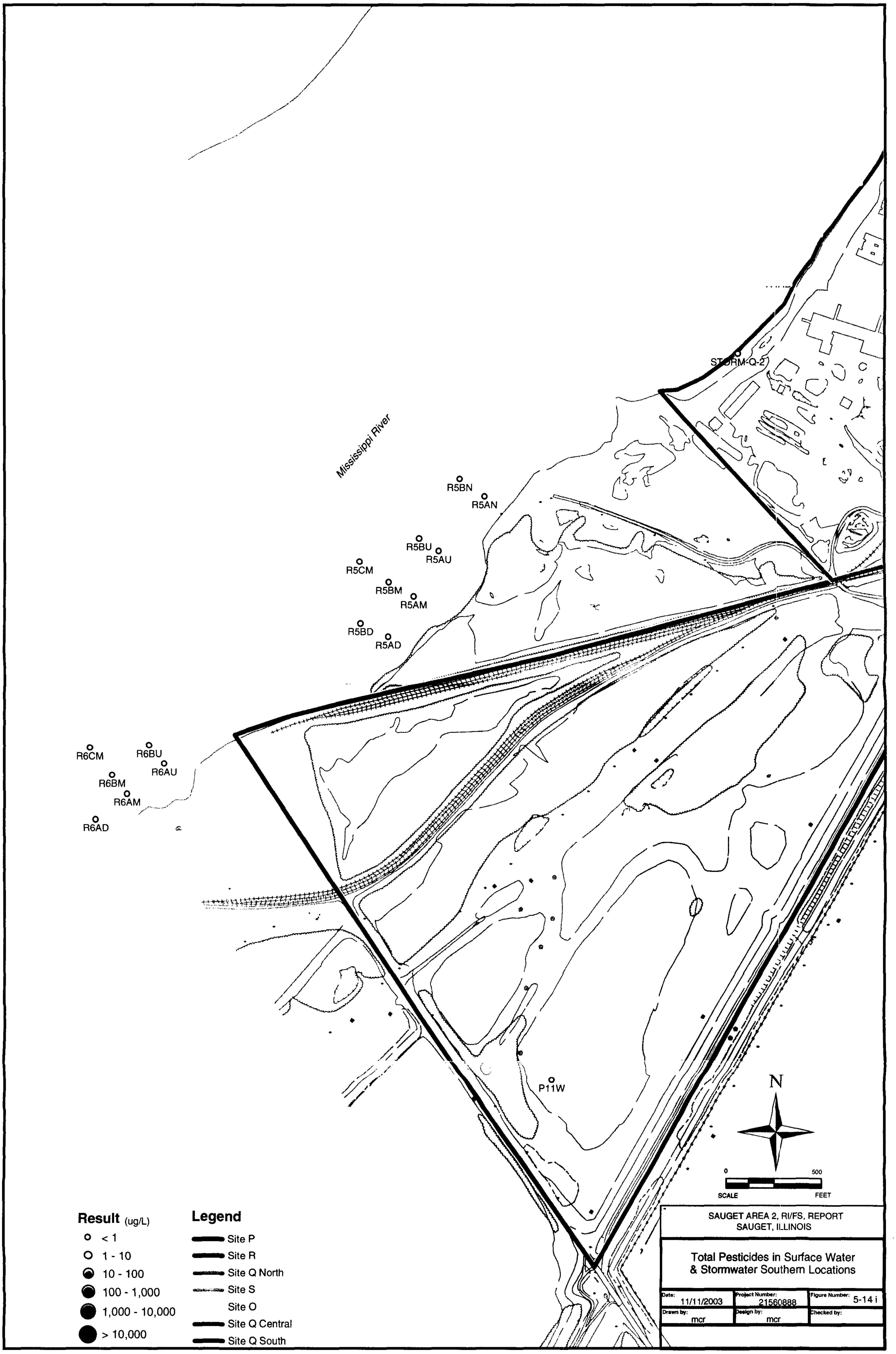
Total SVOCs in Surface Water & Stormwater Southern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 f
Drawn by: mcr	Design by: mcr	Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Surface Water
& Stormwater Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 g
Drawn by: mcr
Design by: mcr
Checked by:



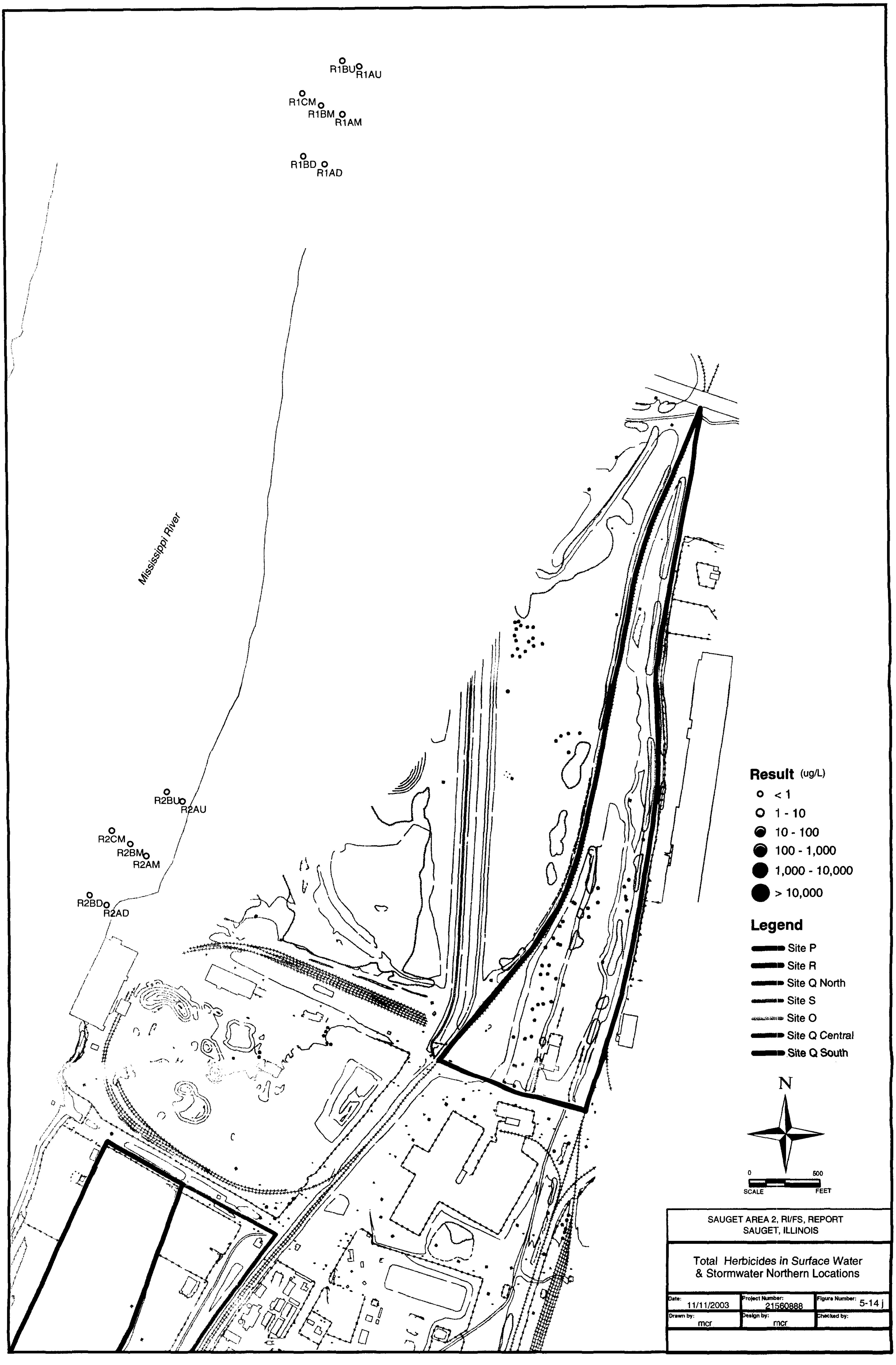
Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
STORM-R-1
R3BD
R3AD
STORM-Q-1
R4BU
R4AU
R4CM
R4BM
R4AM
R4BD
R4AD
STORM-Q-2
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Pesticides in Surface Water
& Stormwater Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 h
Drawn by: mcr
Design by: mcr
Checked by:

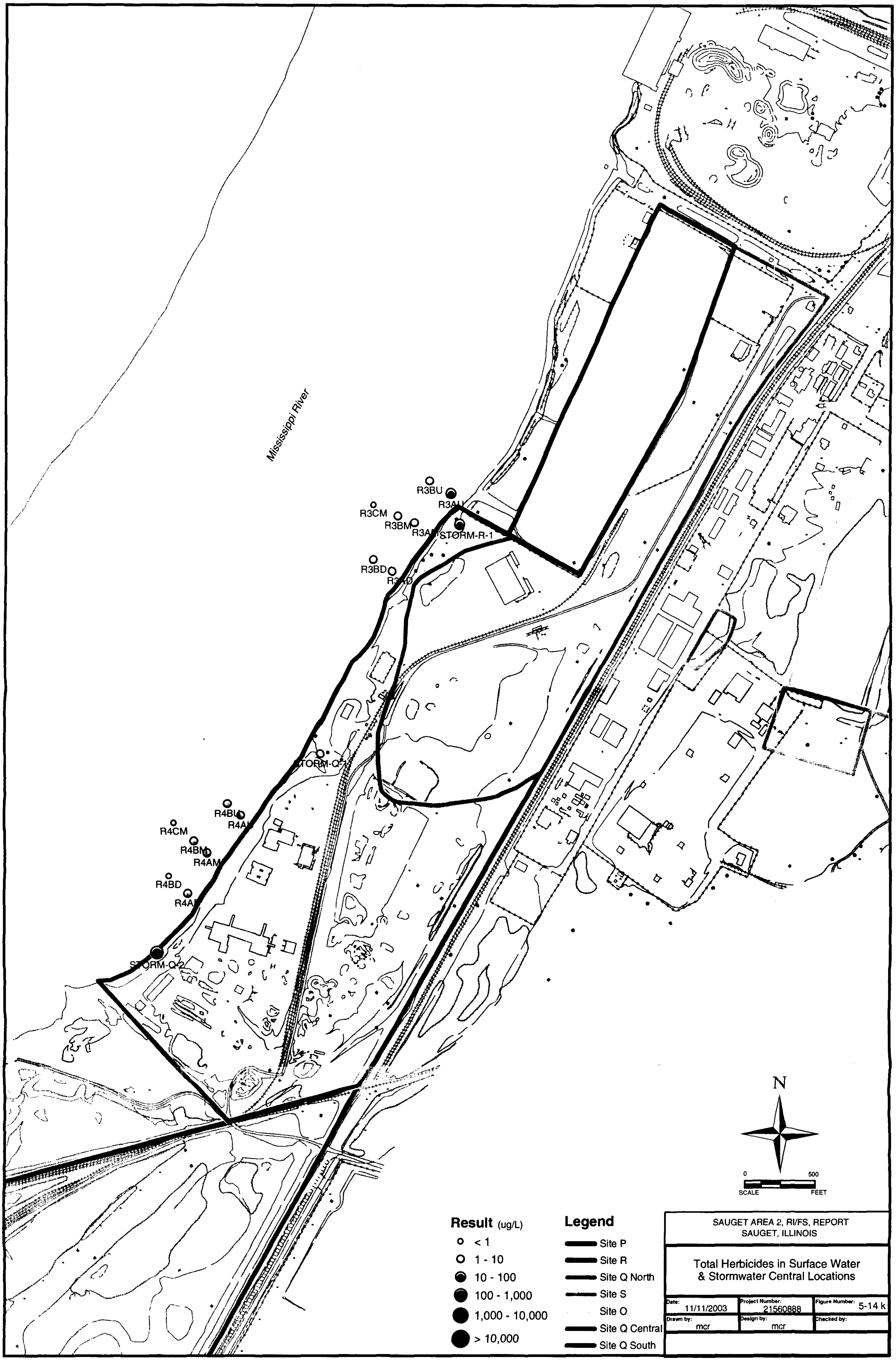


SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

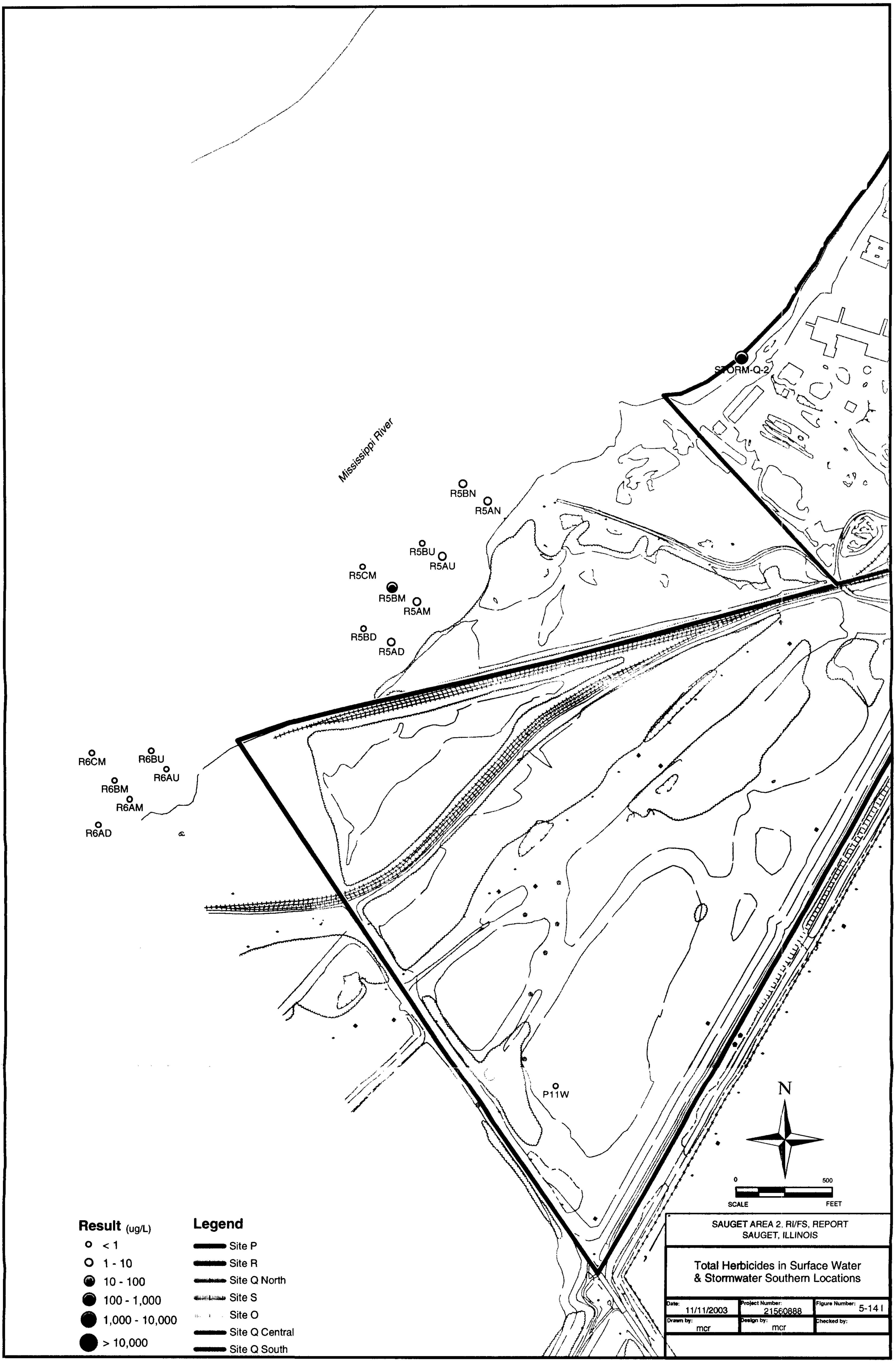
Total Pesticides in Surface Water & Stormwater Southern Locations

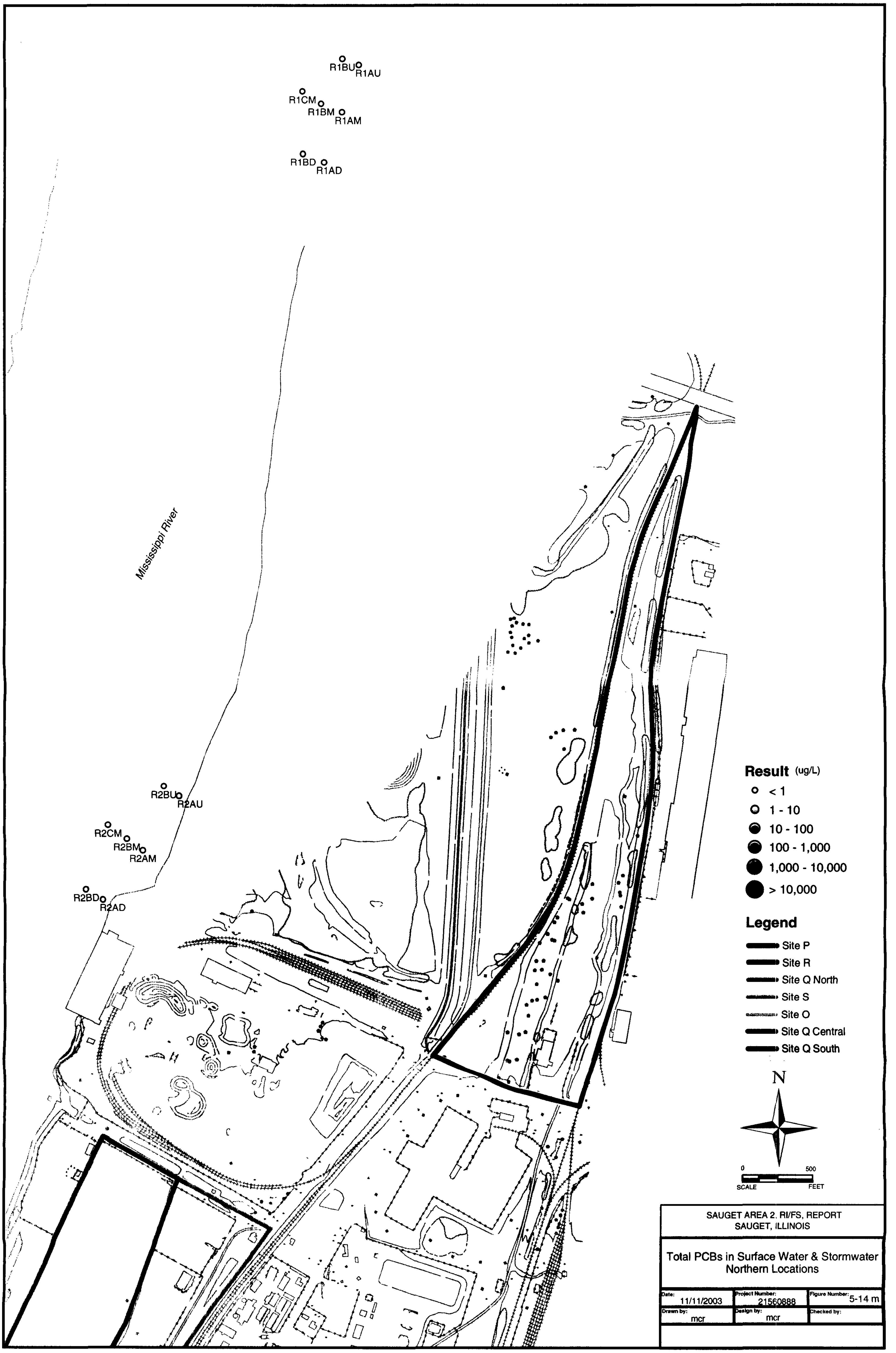
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 i
Drawn by: mcr	Design by: mcr	Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Surface Water & Stormwater Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 j
Drawn by: mcr
Design by: mcr
Checked by:

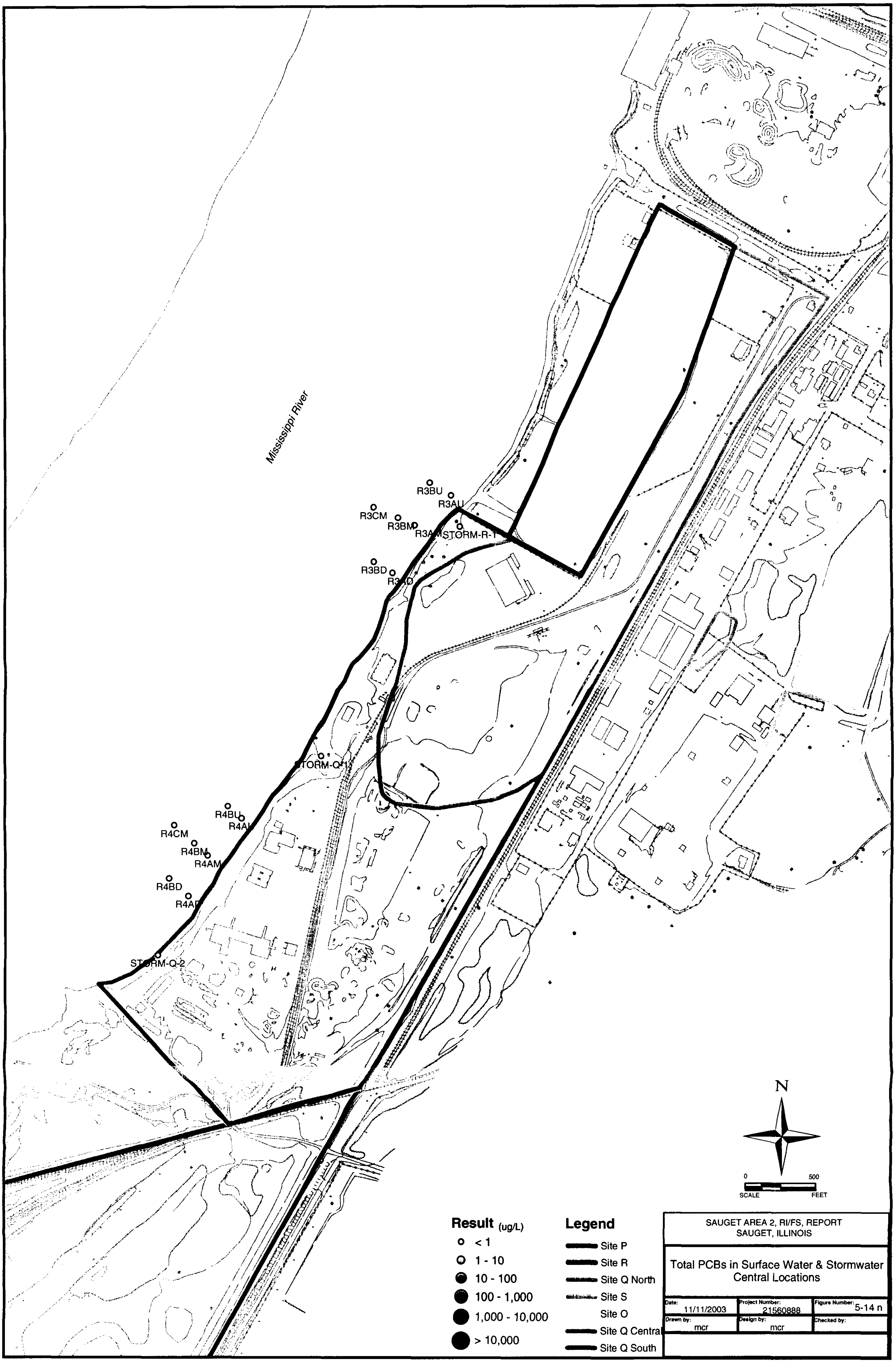


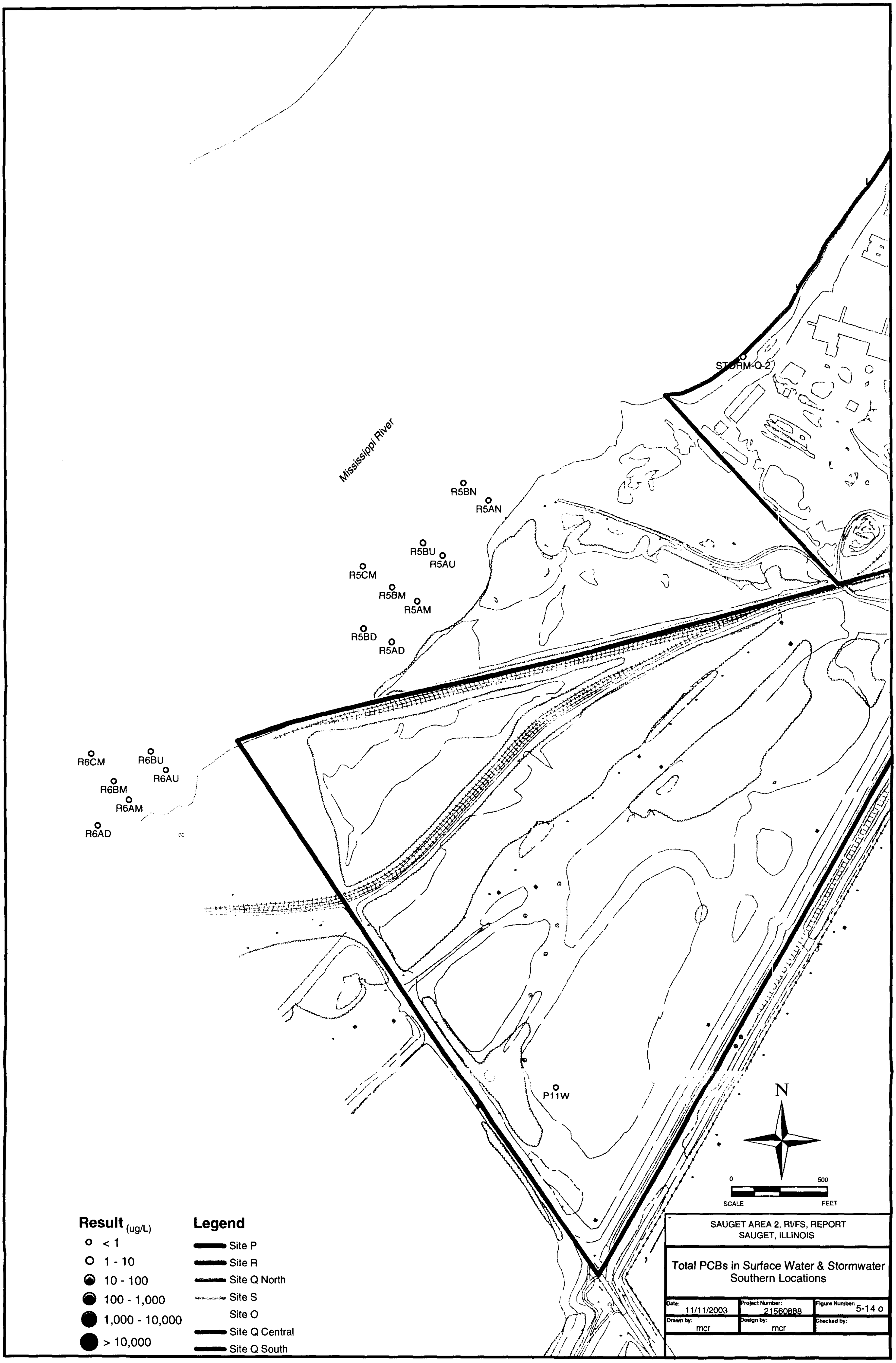
Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
STORM-R-1
R3BD
R3AD
STORM-Q-1
R4BU
R4AU
R4CM
R4BM
R4AM
R4BD
R4AD
STORM-Q-2
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Herbicides in Surface Water
& Stormwater Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 k
Drawn by: mcr
Design by: mcr
Checked by:

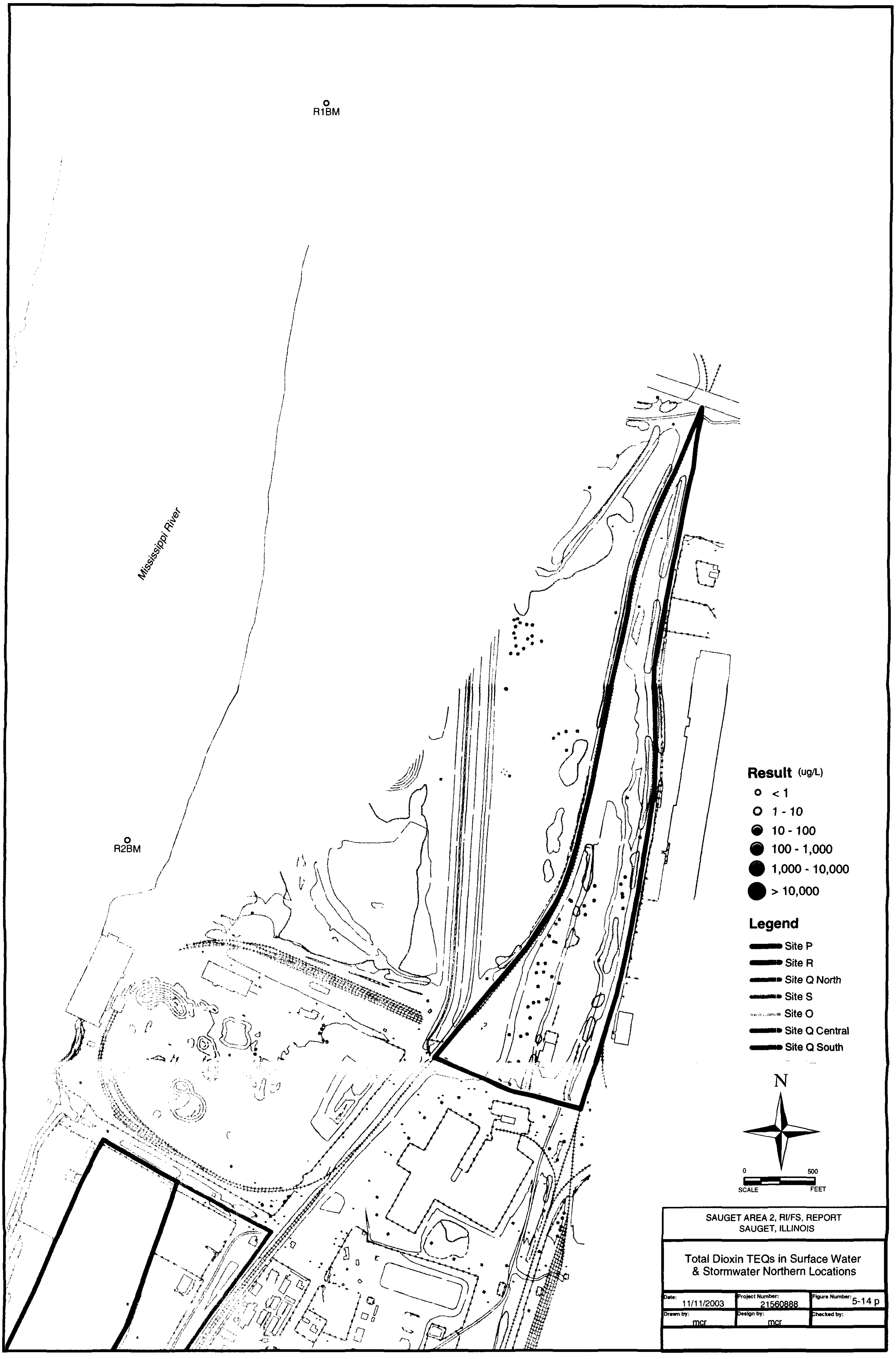

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
STORM-Q-2
P11W
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2. RI/FS. REPORT
SAUGET, ILLINOIS
Total Herbicides in Surface Water & Stormwater Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-141
Drawn by: mcr
Design by: mcr
Checked by:



R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2. RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Surface Water & Stormwater
Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 m
Drawn by: mcr
Design by: mcr
Checked by:


Mississippi River
R3BU
R3AU
R3CM
R3BM
R3AM
STORM-R-1
R3BD
STORM-Q-1
R4BU
R4CM
R4BM
R4AM
R4BD
STORM-Q-2
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Surface Water & Stormwater
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 n
Drawn by: mcr
Design by: mcr
Checked by:

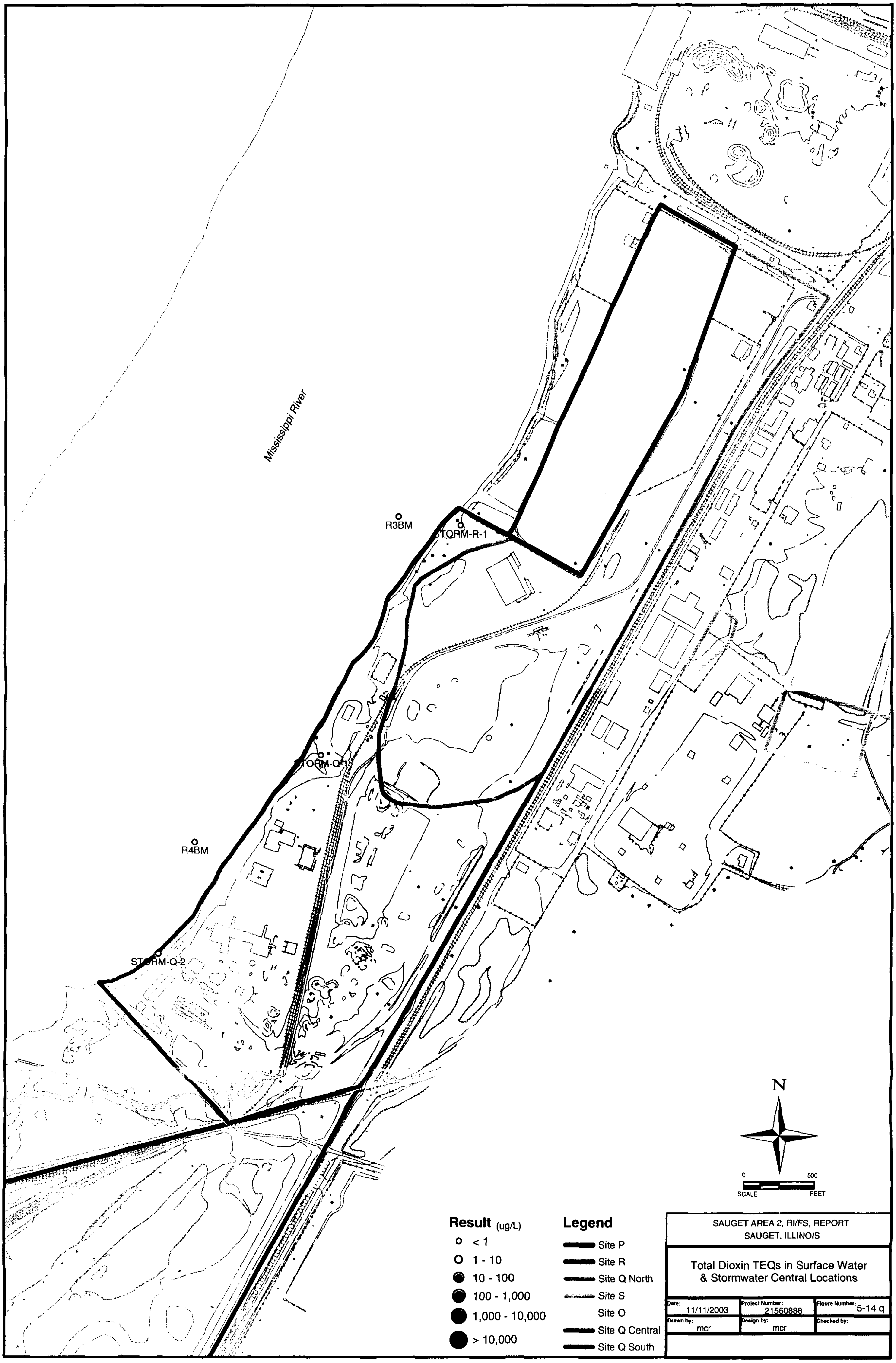

Mississippi River
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
STORM-Q-2
P11W
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total PCBs in Surface Water & Stormwater
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 o
Drawn by: mcr
Design by: mcr
Checked by:

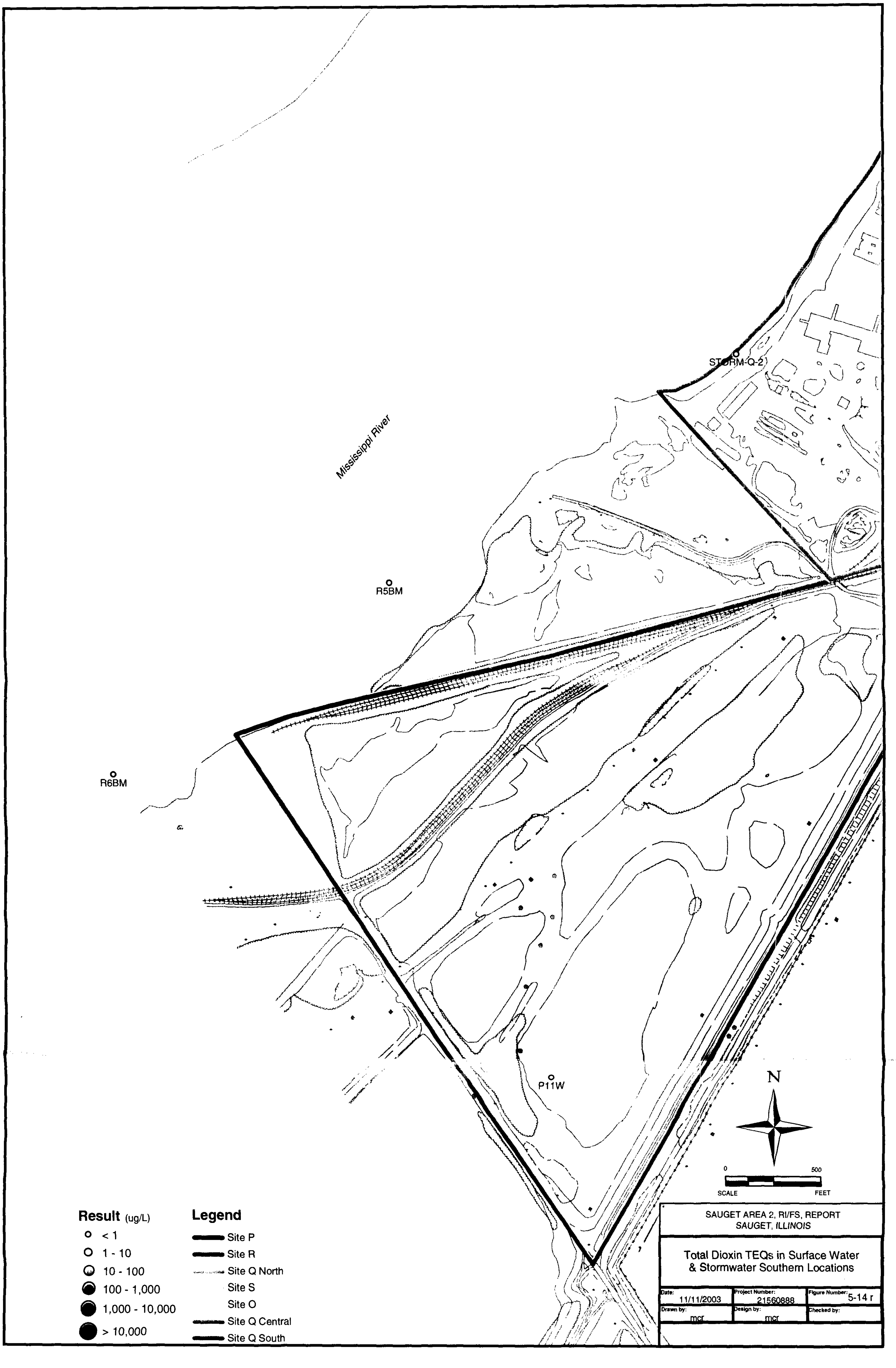


SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Surface Water & Stormwater Northern Locations

Date:	Project Number:	Figure Number:
11/11/2003	21560888	5-14 p
Drawn by: mcr	Design by: mcr	Checked by:

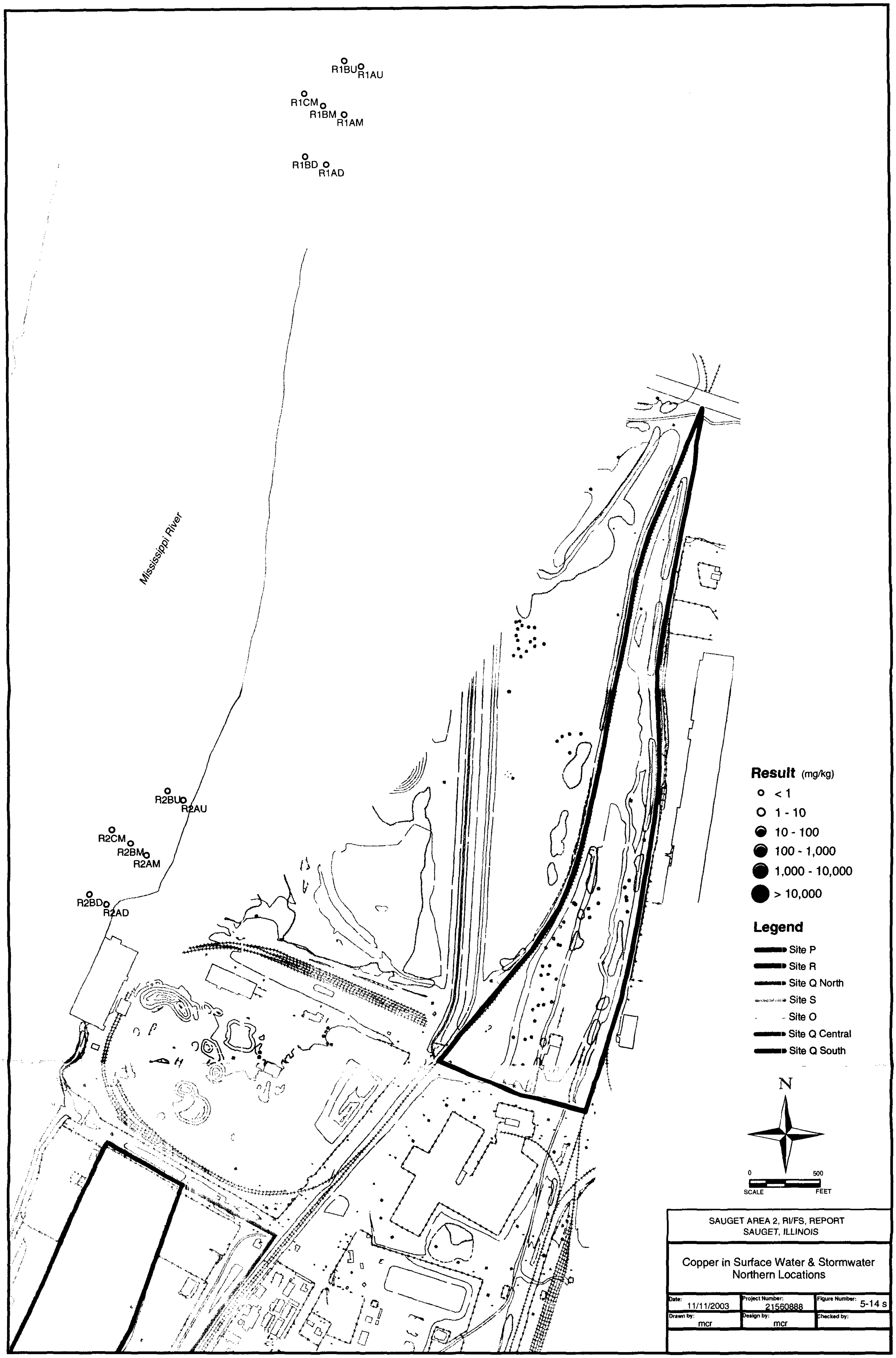

Mississippi River
R3BM
STORM-R-1
STORM-Q-1
R4BM
STORM-Q-2
N
0
500
SCALE
FEET
Result (ug/L)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Total Dioxin TEQs in Surface Water
& Stormwater Central Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-14 q
Drawn by:
mcr
Design by:
mcr
Checked by:



SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Total Dioxin TEQs in Surface Water & Stormwater Southern Locations

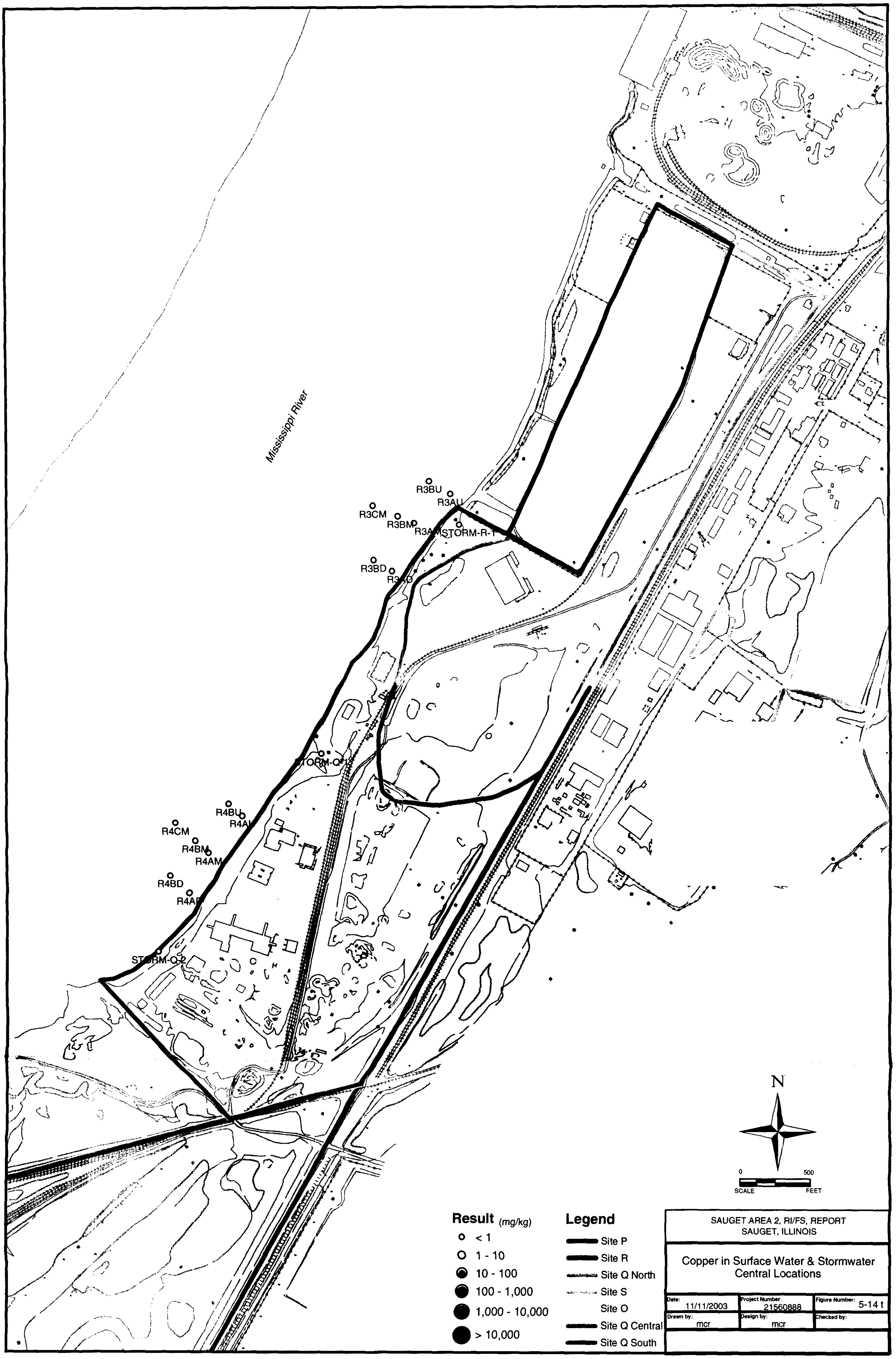
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 r
Drawn by: mcr	Design by: mcr	Checked by:



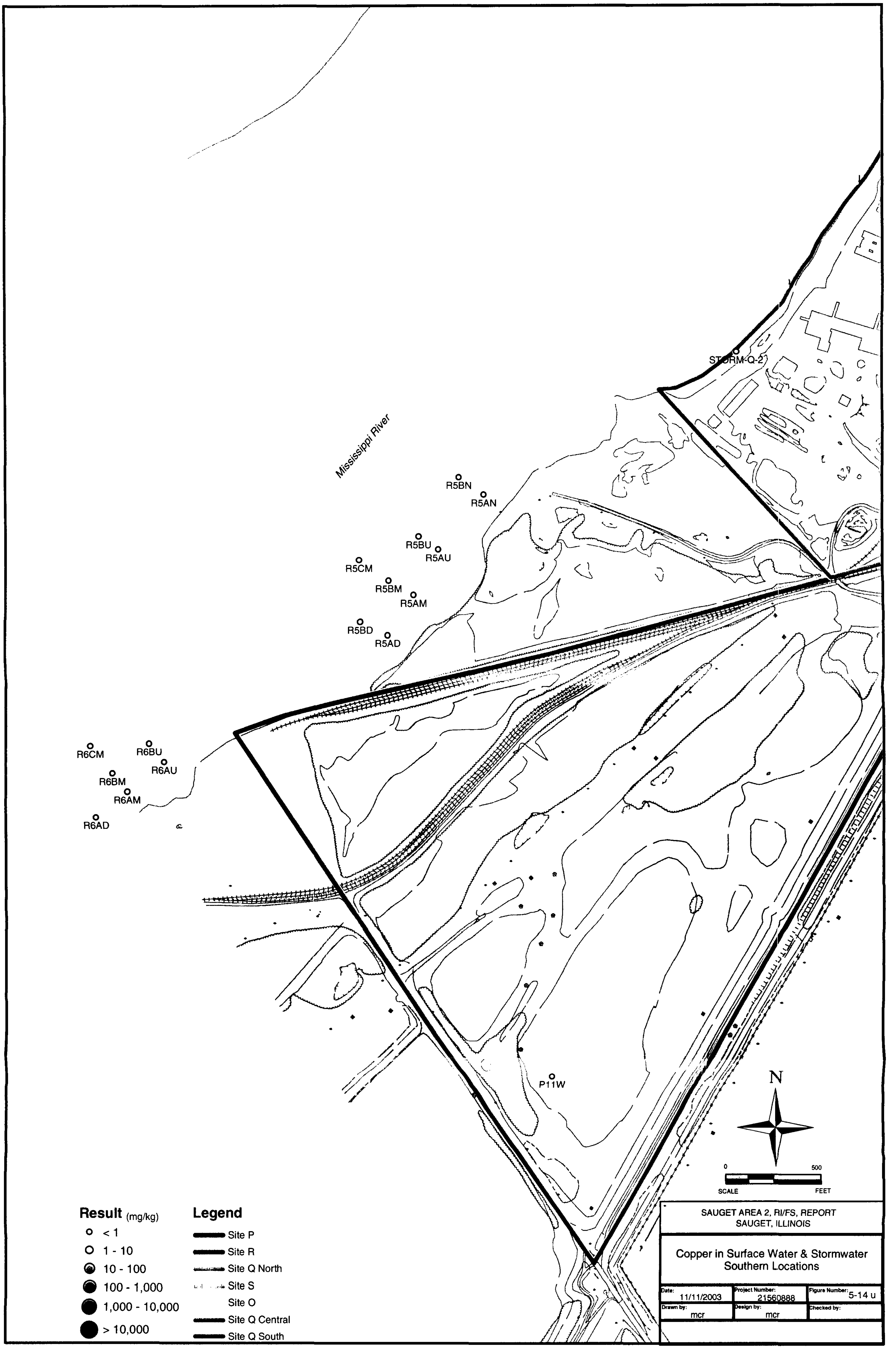
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Copper in Surface Water & Stormwater
Northern Locations

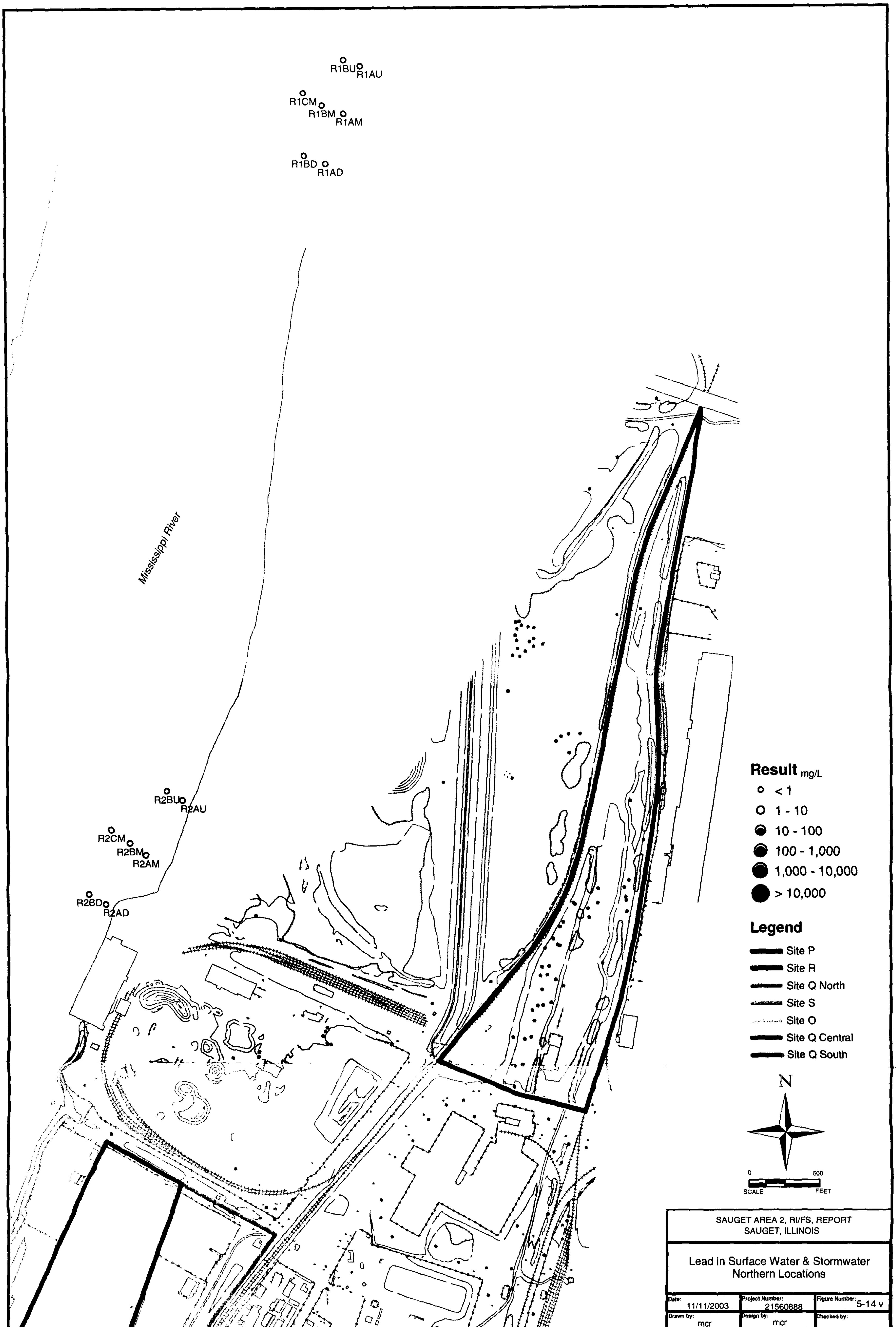
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 s
Drawn by: mcr	Design by: mcr	Checked by:



SAUGET AREA 2, RI/FS, REPORT SAUGET, ILLINOIS		
Copper in Surface Water & Stormwater Central Locations		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 t
Drawn by: mcr	Design by: mcr	Checked by:



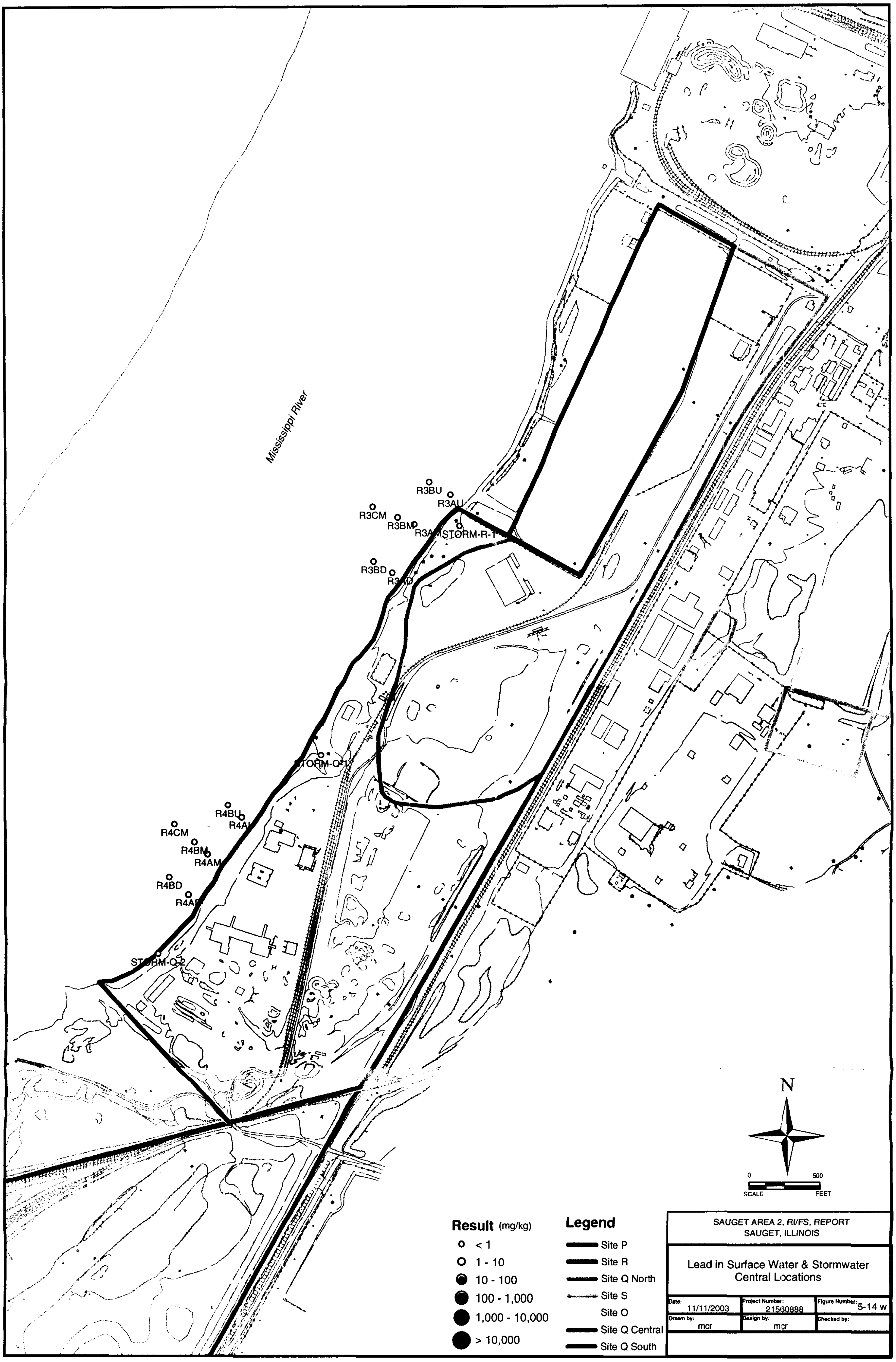
Mississippi River
STORM-Q-2
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11W
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Copper in Surface Water & Stormwater
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 u
Drawn by: mcr
Design by: mcr
Checked by:



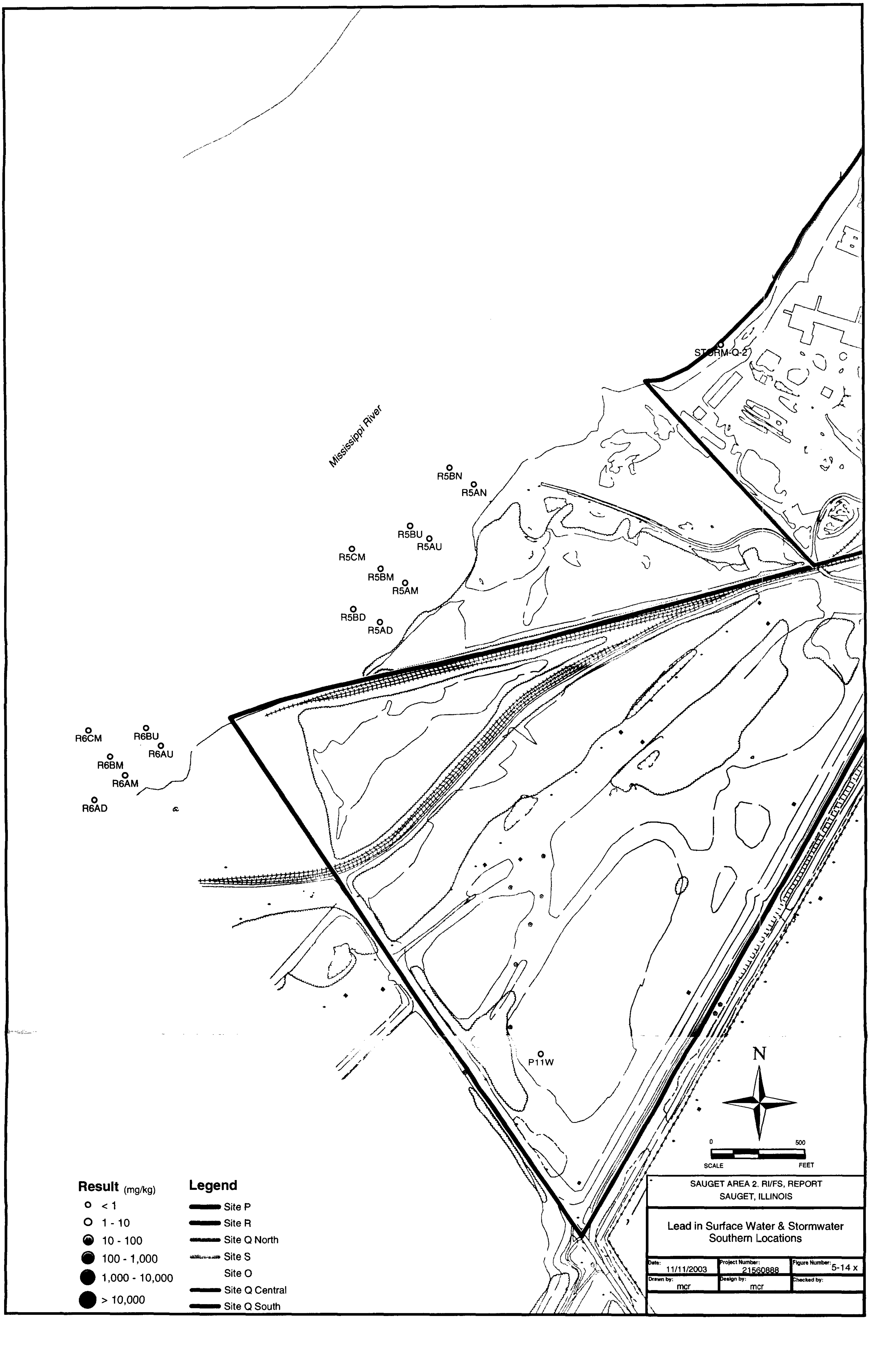
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

Lead in Surface Water & Stormwater
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 v
Drawn by: mcr	Design by: mcr	Checked by:



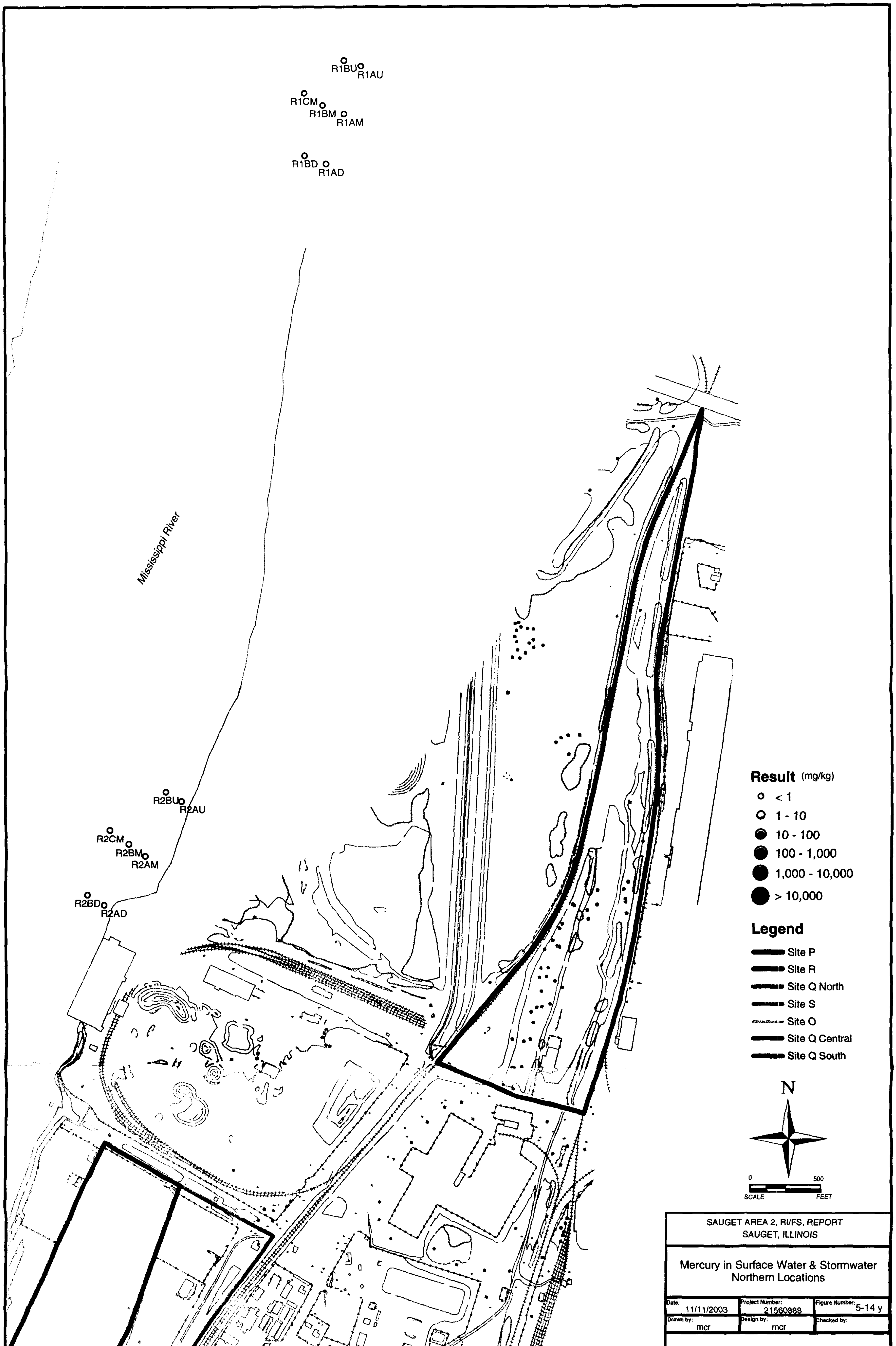
SAUGET AREA 2, *RI/FS*, REPORT SAUGET, ILLINOIS		
Lead in Surface Water & Stormwater Central Locations		
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 w
Drawn by: mcr	Design by: mcr	Checked by:

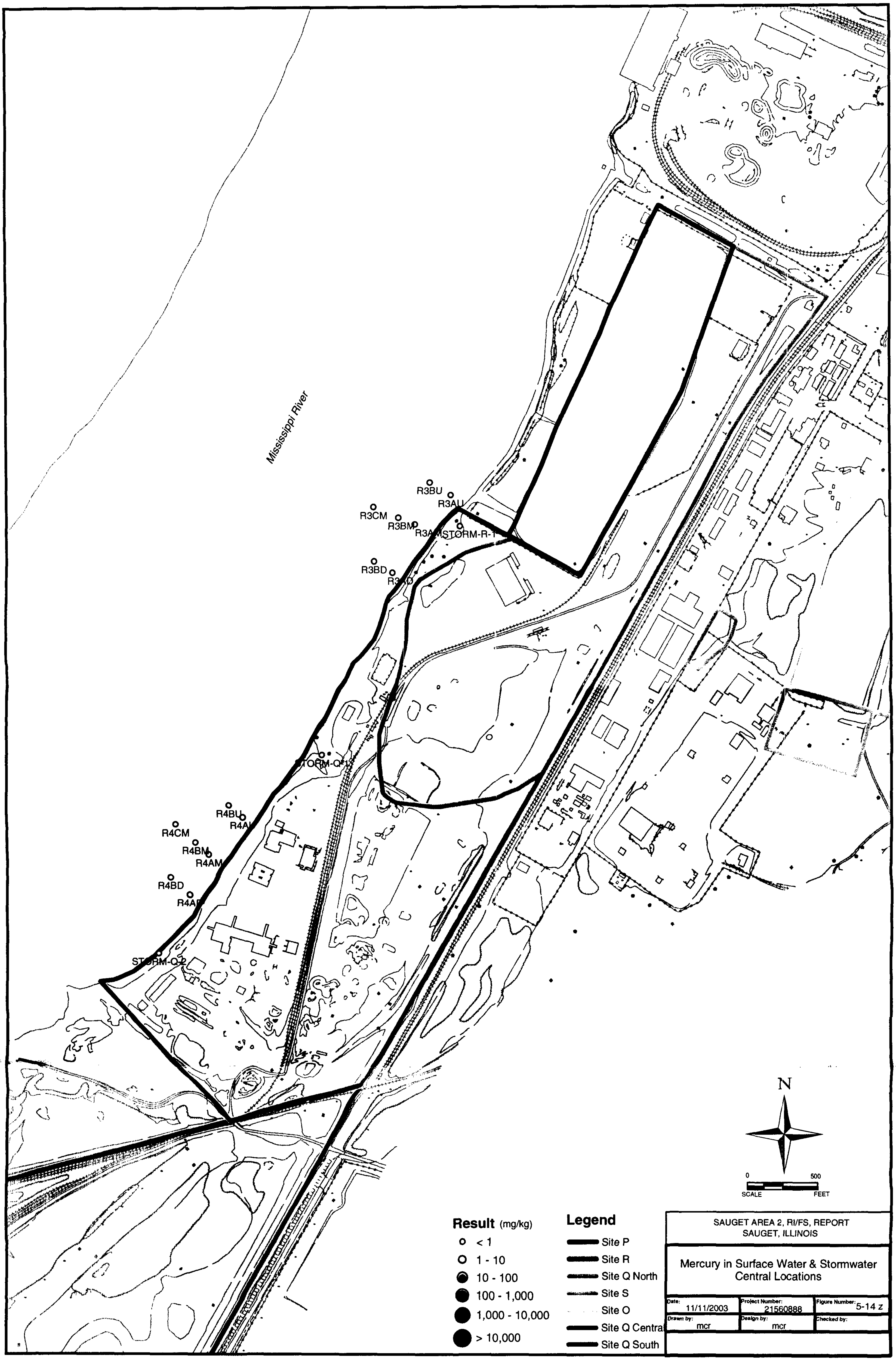


SAUGET AREA 2. RI/FS, REPORT
SAUGET, ILLINOIS

Lead in Surface Water & Stormwater
Southern Locations

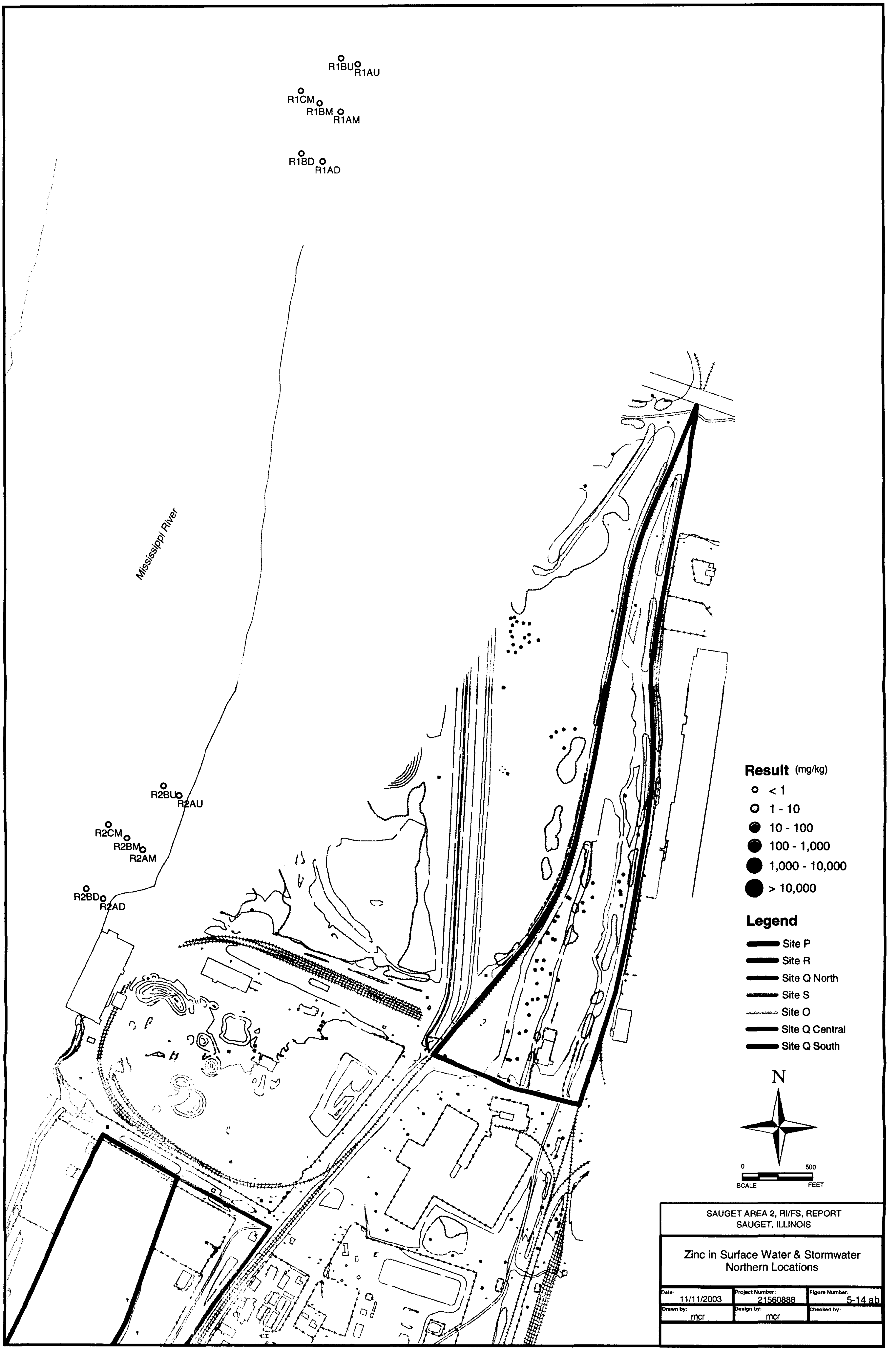
Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 x
Drawn by: mcr	Design by: mcr	Checked by:


R1BU
R1AU
R1CM
R1BM
R1AM
R1BD
R1AD
Mississippi River
R2BU
R2AU
R2CM
R2BM
R2AM
R2BD
R2AD
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
N
0
500
SCALE
FEET
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Surface Water & Stormwater
Northern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 y
Drawn by: mcr
Design by: mcr
Checked by:



Mississippi River
R3BU
R3AU
R3CM
R3BM
STORM-R-1
R3BD
STORM-Q-1
R4BU
R4CM
R4BM
R4AM
R4BD
STORM-Q-2
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Surface Water & Stormwater
Central Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 z
Drawn by: mcr
Design by: mcr
Checked by:

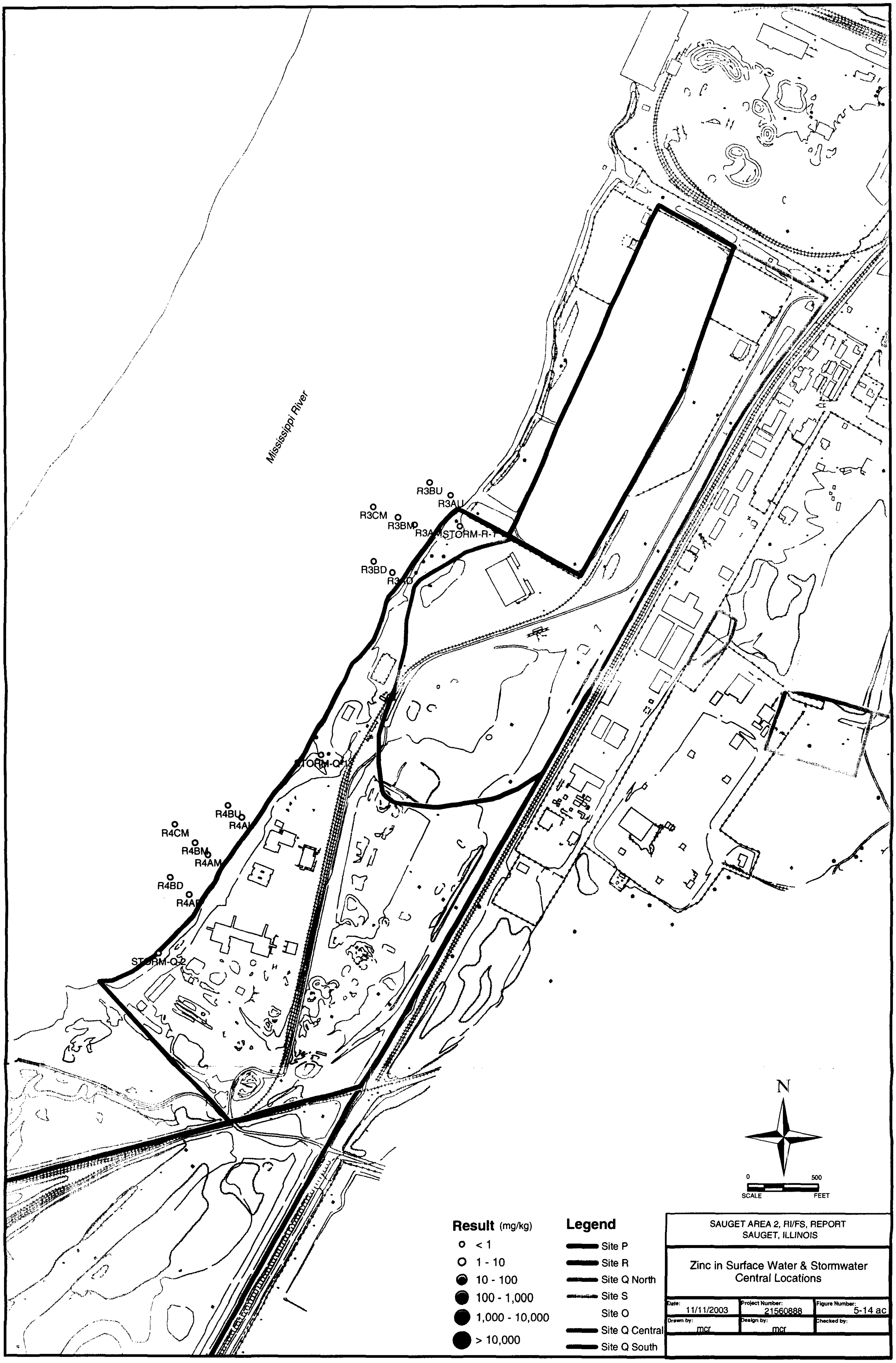

Mississippi River
STORM-Q-2
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11W
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Mercury in Surface Water & Stormwater
Southern Locations
Date: 11/11/2003
Project Number: 21560888
Figure Number: 5-14 aa
Drawn by: mcr
Design by: mcr
Checked by:



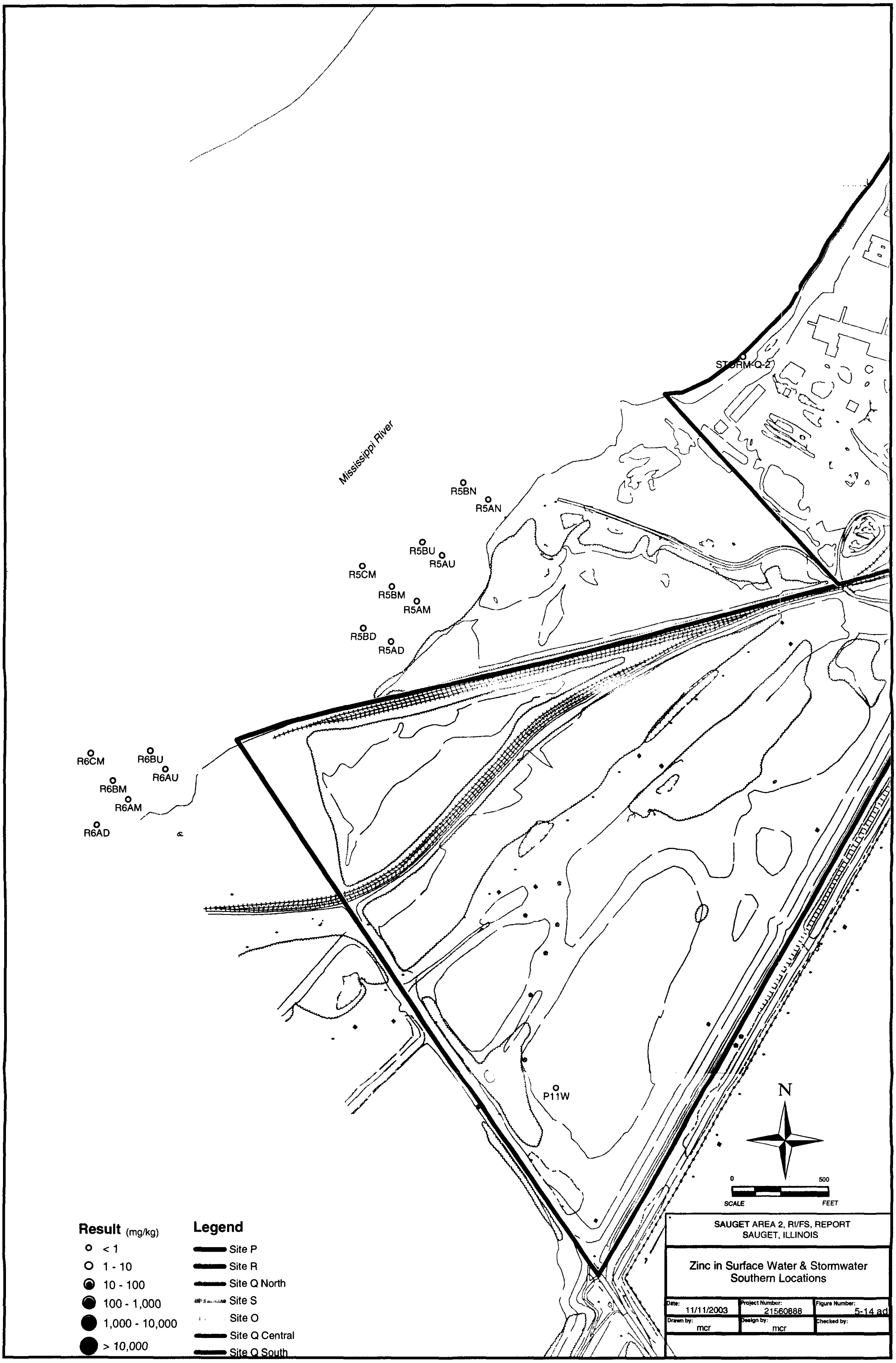
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS

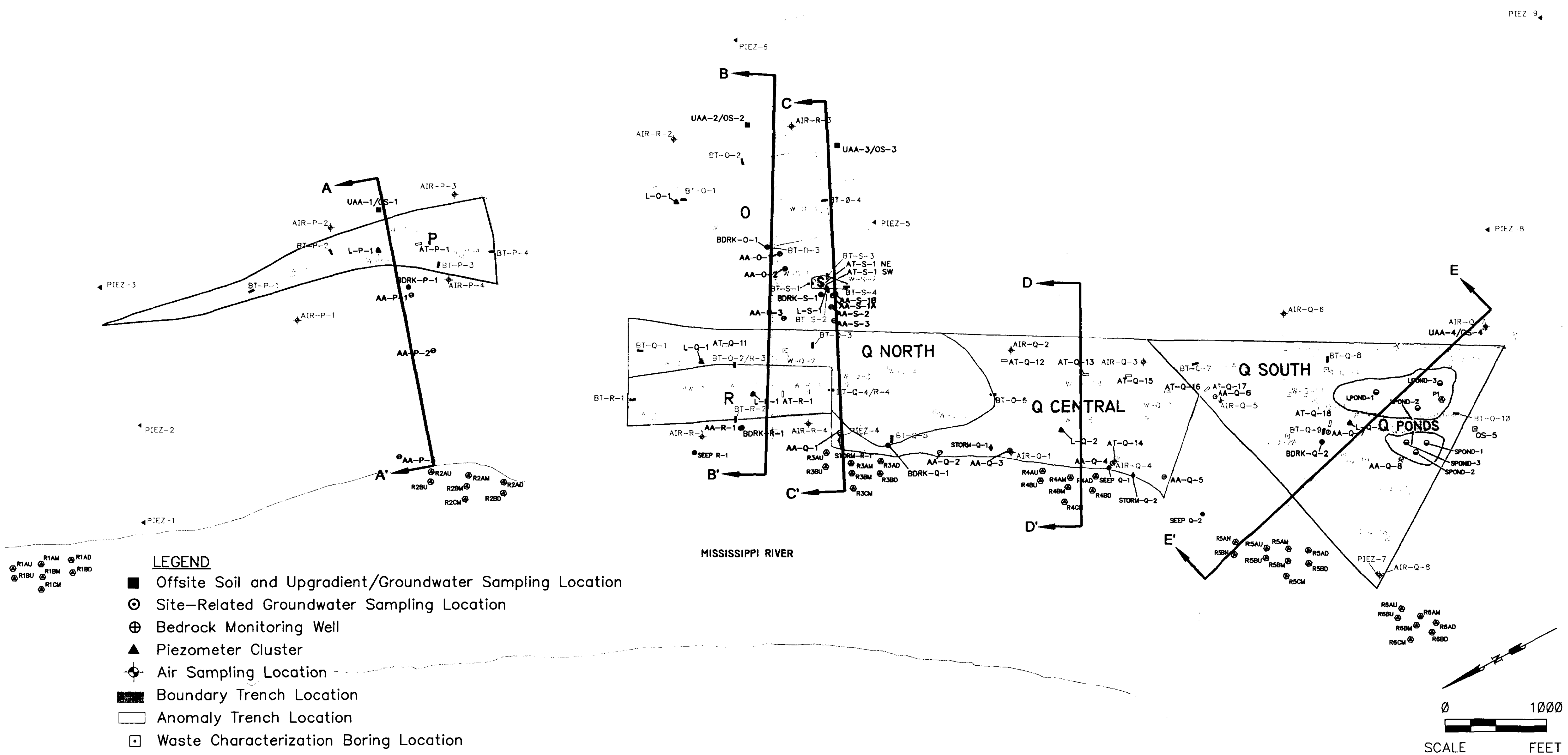
Zinc in Surface Water & Stormwater
Northern Locations

Date: 11/11/2003	Project Number: 21560888	Figure Number: 5-14 ab
Drawn by: mcr	Design by: mcr	Checked by:



Mississippi River
R3BU
R3CM
R3BM
R3BD
STORM-Q-1
R4BU
R4CM
R4BM
R4AM
R4BD
STORM-Q-2
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Surface Water & Stormwater
Central Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-14 ac
Drawn by:
mcr
Design by:
mcr
Checked by:


Mississippi River
STORM-Q-2
R5BN
R5AN
R5BU
R5AU
R5CM
R5BM
R5AM
R5BD
R5AD
R6CM
R6BU
R6AU
R6BM
R6AM
R6AD
P11W
N
0
500
SCALE
FEET
Result (mg/kg)
< 1
1 - 10
10 - 100
100 - 1,000
1,000 - 10,000
> 10,000
Legend
Site P
Site R
Site Q North
Site S
Site O
Site Q Central
Site Q South
SAUGET AREA 2, RI/FS, REPORT
SAUGET, ILLINOIS
Zinc in Surface Water & Stormwater
Southern Locations
Date:
11/11/2003
Project Number:
21560888
Figure Number:
5-14 ad
Drawn by:
mcr
Design by:
mcr
Checked by:

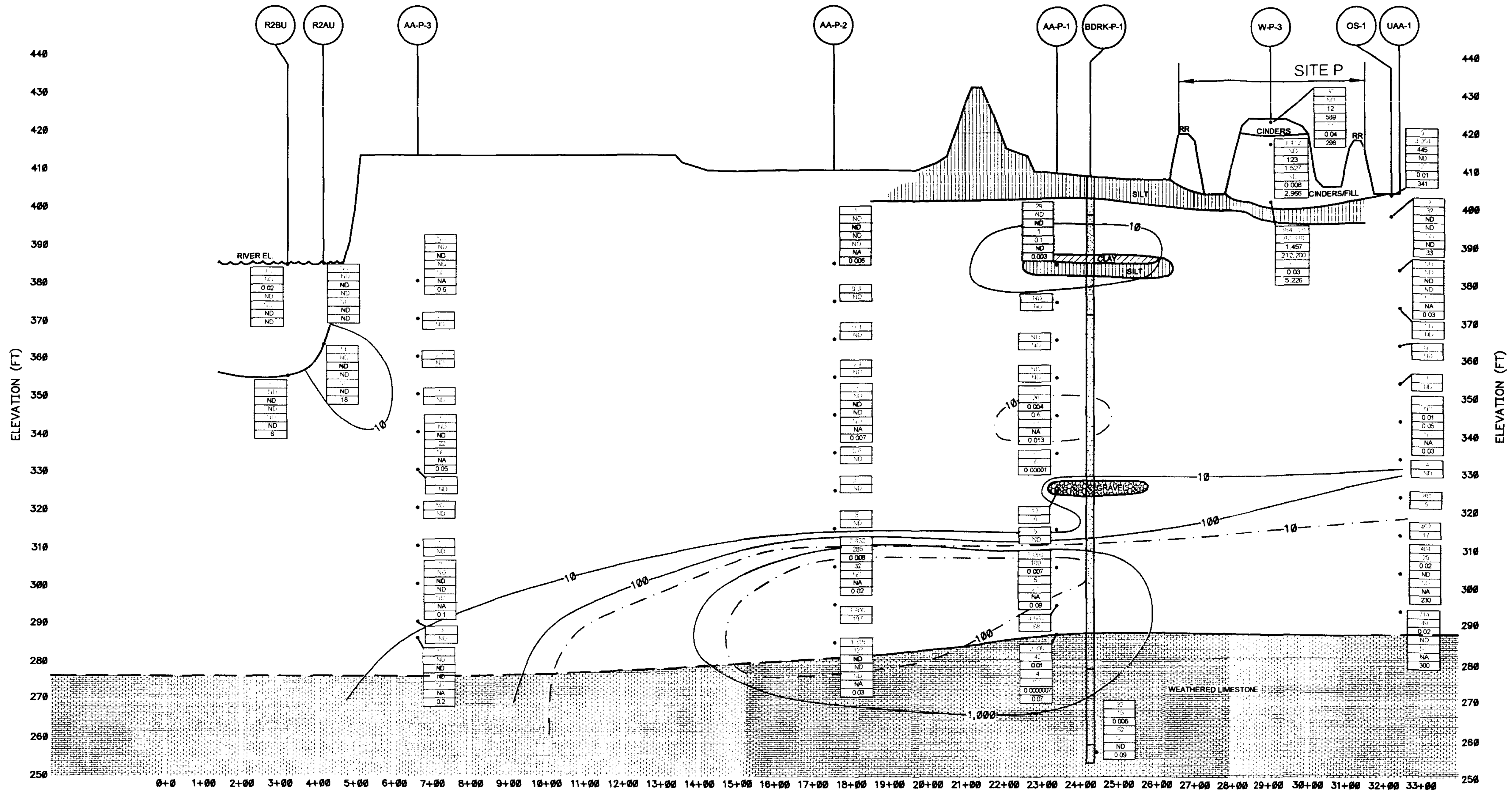


LEGEND

- Offsite Soil and Upgradient/Groundwater Sampling Location
- Site-Related Groundwater Sampling Location
- Bedrock Monitoring Well
- Piezometer Cluster
- Air Sampling Location
- Boundary Trench Location
- Anomaly Trench Location
- Waste Characterization Boring Location
- Leachate Monitoring Well Location
- River Soil Sediment Sample Location
- Stormwater Sample Location
- Soil Gas Screening Location
- Seep Sampling Location
- Pond Sampling Location

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Sample Location Map with Cross Section Locations
FIG. NO.	6-1

File: E:\21560888.04001\REPORTS\RI_FS REPORT\6-1.DWG Last edited: 12/16/03 @ 1:25 p.m. WC-ST.LOUIS, MO



LEGEND

TOTAL VOCs
TOTAL SVOCs
TOTAL PESTICIDES
TOTAL HERBICIDES
TOTAL PCBs
TOTAL DIOXIN
TOTAL METALS

TOTAL VOCs
TOTAL SVOCs
TOTAL DIOXIN

TOTAL VOCs
TOTAL SVOCs

— · — · — SVOC (ppb)

———— VOC (ppb)

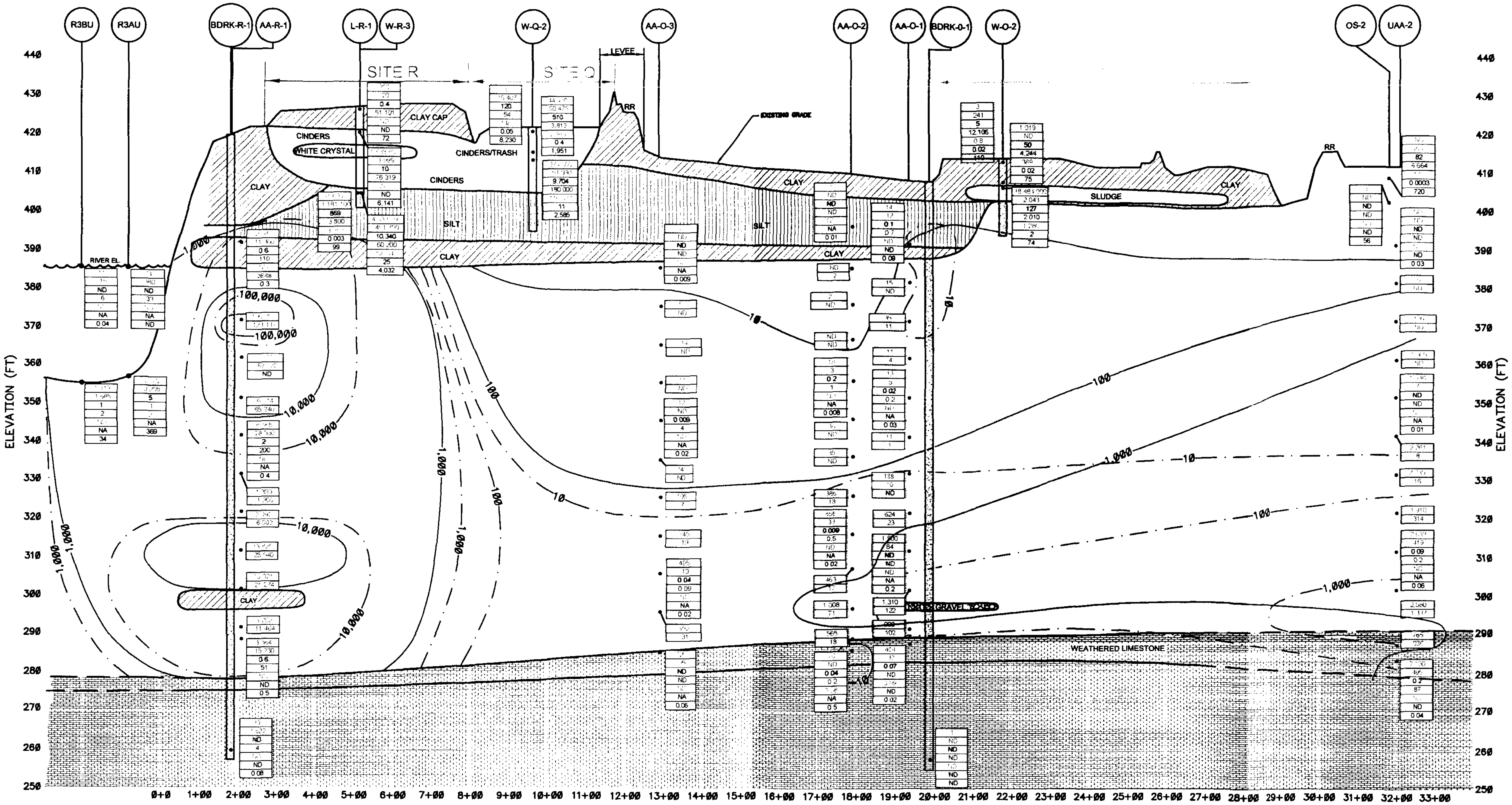
R2BU - RIVER SAMPLE - SURFACE WATER & SEDIMENT
AA - ALLUVIAL AQUIFER
BDRK - BEDROCK MONITORING WELL
L - LEACHATE MONITORING WELL
W - SOIL/WASTE SAMPLE
OS - OFF SITE SOIL SAMPLE
UAA - UPGRADIENT ALLUVIAL AQUIFER
WASTE SAMPLE - VOCs & DIOXIN SAMPLES COLLECTED AT THE SPECIFIED INTERVAL. THE REST OF ANALYTES COLLECTED FROM COMPOSITE

NOTES:
1) ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)
2) * TOTAL METALS - INCLUDE TOTAL FOR ONLY COPPER, LEAD, MERCURY, AND ZINC.
3) BEDROCK WELL AND LEACHATE DATA FROM SEPTEMBER 2002 SAMPLING EVENT

0 30
VERTICAL SCALE
0 300
HORIZONTAL SCALE

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY: Geologic Cross Section A–A'	FIG. NO. 6–2

File: E:\21560888.04001\REPORTS\RI_FS_REPORT\6-2.DWG Last edited: DEC. 16, 03 @ 1:26 p.m. by: DJDEGUIO



LEGEND

TOTAL VOCs
TOTAL SVOCs
TOTAL PESTICIDES
TOTAL HERBICIDES
TOTAL PCBs
TOTAL DIOXIN
TOTAL METALS

TOTAL VOCs
TOTAL SVOCs
TOTAL DIOXIN

TOTAL VOCs
TOTAL SVOCs

— · — · — SVOC (ppb)
———— VOC (ppb)

R2BU - RIVER SAMPLE - SURFACE WATER & SEDIMENT
AA - ALLUVIAL AQUIFER
BDRK - BEDROCK MONITORING WELL
L - LEACHATE MONITORING WELL
W - SOIL/WASTE SAMPLE
OS - OFF SITE SOIL SAMPLE
UAA - UPGRADIENT ALLUVIAL AQUIFER
WASTE SAMPLE - VOCs & DIOXIN SAMPLES COLLECTED AT THE SPECIFIED INTERVAL. THE REST OF ANALYTES COLLECTED FROM COMPOSITE

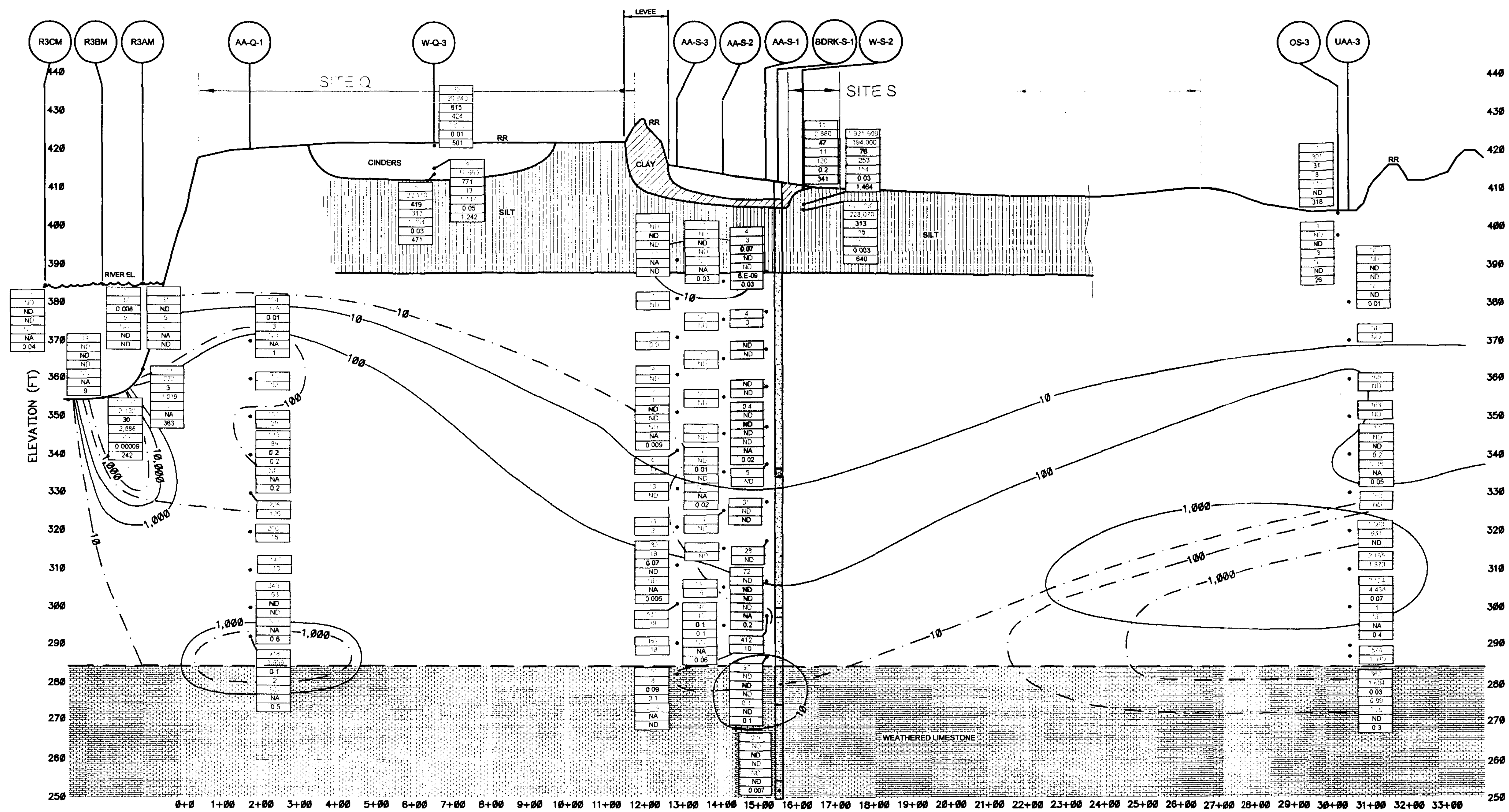
NOTES:

1) ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)
2) * TOTAL METALS - INCLUDE TOTAL FOR ONLY COPPER, LEAD, MERCURY, AND ZINC.
3) BEDROCK WELL AND LEACHATE DATA FROM SEPTEMBER 2002 SAMPLING EVENT

Ø 30
VERTICAL SCALE
Ø 3ØØ
HORIZONTAL SCALE

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Geologic Cross Section B–B' — FIG. NO. 6–3

File: E:\21560888.04001\REPORTS\RI_FS_REPORT\6-3.DWG Last edited: DEC. 16, 03 @ 1:29 p.m. by: DJDEGUIO



LEGEND

TOTAL VOCs
TOTAL SVOCs
TOTAL PESTICIDES
TOTAL HERBICIDES
TOTAL PCBs
TOTAL DIOXIN
TOTAL METALS

TOTAL VOCs
TOTAL SVOCs
TOTAL DIOXIN

TOTAL VOCs
TOTAL SVOCs

— · — · — SVOC (ppb)

——————— VOC (ppb)

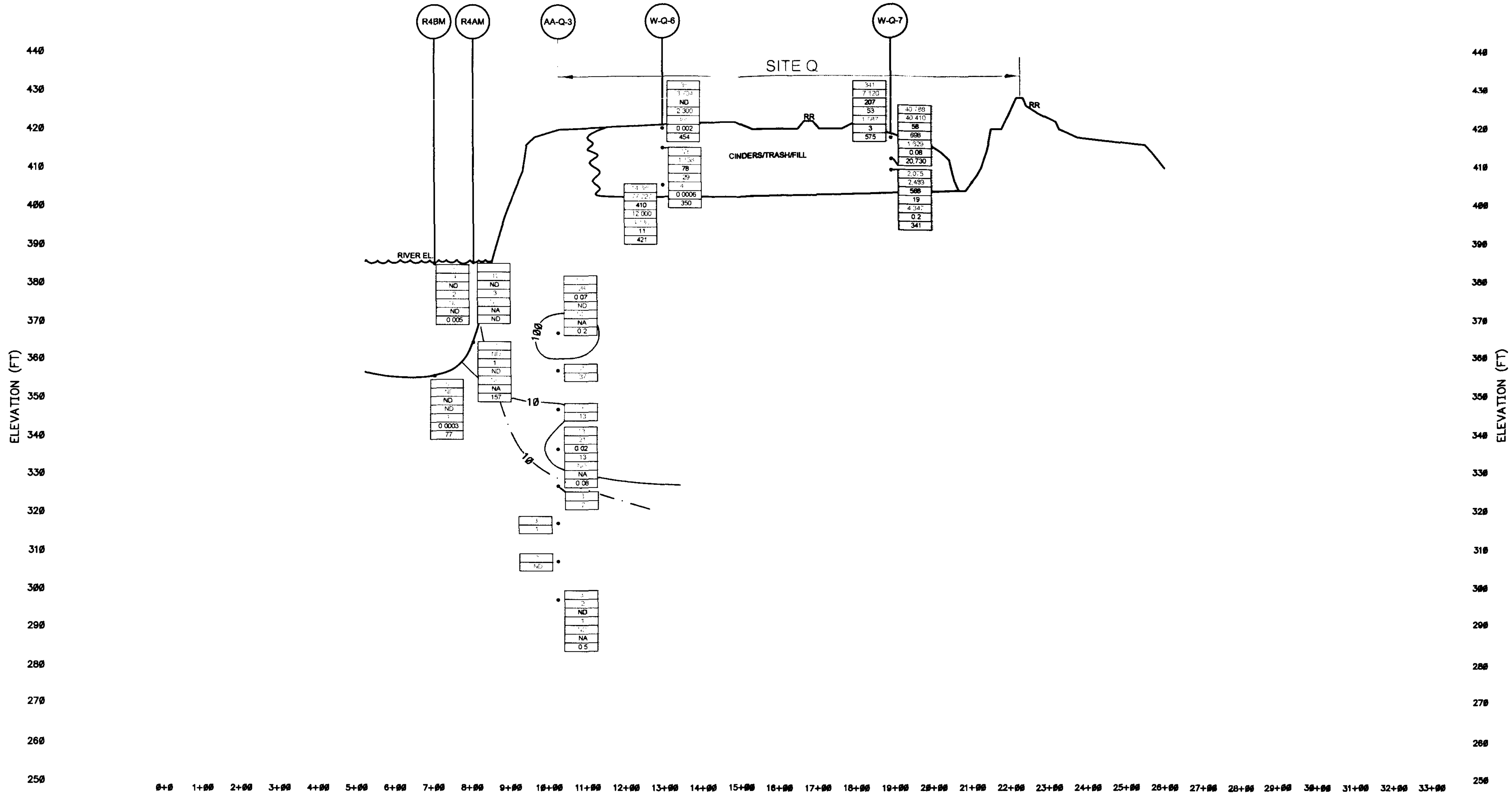
R2BU - RIVER SAMPLE - SURFACE WATER & SEDIMENT
AA - ALLUVIAL AQUIFER
BDRK - BEDROCK MONITORING WELL
L - LEACHATE MONITORING WELL
W - SOIL/WASTE SAMPLE
OS - OFF SITE SOIL SAMPLE
UAA - UPGRADIENT ALLUVIAL AQUIFER
WASTE SAMPLE - VOCs & DIOXIN SAMPLES COLLECTED AT THE SPECIFIED INTERVAL. THE REST OF ANALYTES COLLECTED FROM COMPOSITE

NOTES:
1) ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)
2) * TOTAL METALS - INCLUDE TOTAL FOR ONLY COPPER, LEAD, MERCURY, AND ZINC.
3) BEDROCK WELL AND LEACHATE DATA FROM SEPTEMBER 2002 SAMPLING EVENT

0 30
VERTICAL SCALE
0 300
HORIZONTAL SCALE

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Geologic Cross Section C–C' — FIG. NO. 6–4

File: E:\21560888.04001\REPORTS\RI_FS_REPORT\6-4.DWG Last edited: DEC. 16, 03 @ 1:31 p.m. by: DJDEGUIO



LEGEND

TOTAL VOCs
TOTAL SVOCs
TOTAL PESTICIDES
TOTAL HERBICIDES
TOTAL PCBs
TOTAL DIOXIN
TOTAL METALS

TOTAL VOCs
TOTAL SVOCs
TOTAL DIOXIN

TOTAL VOCs
TOTAL SVOCs

SVOC (ppb)

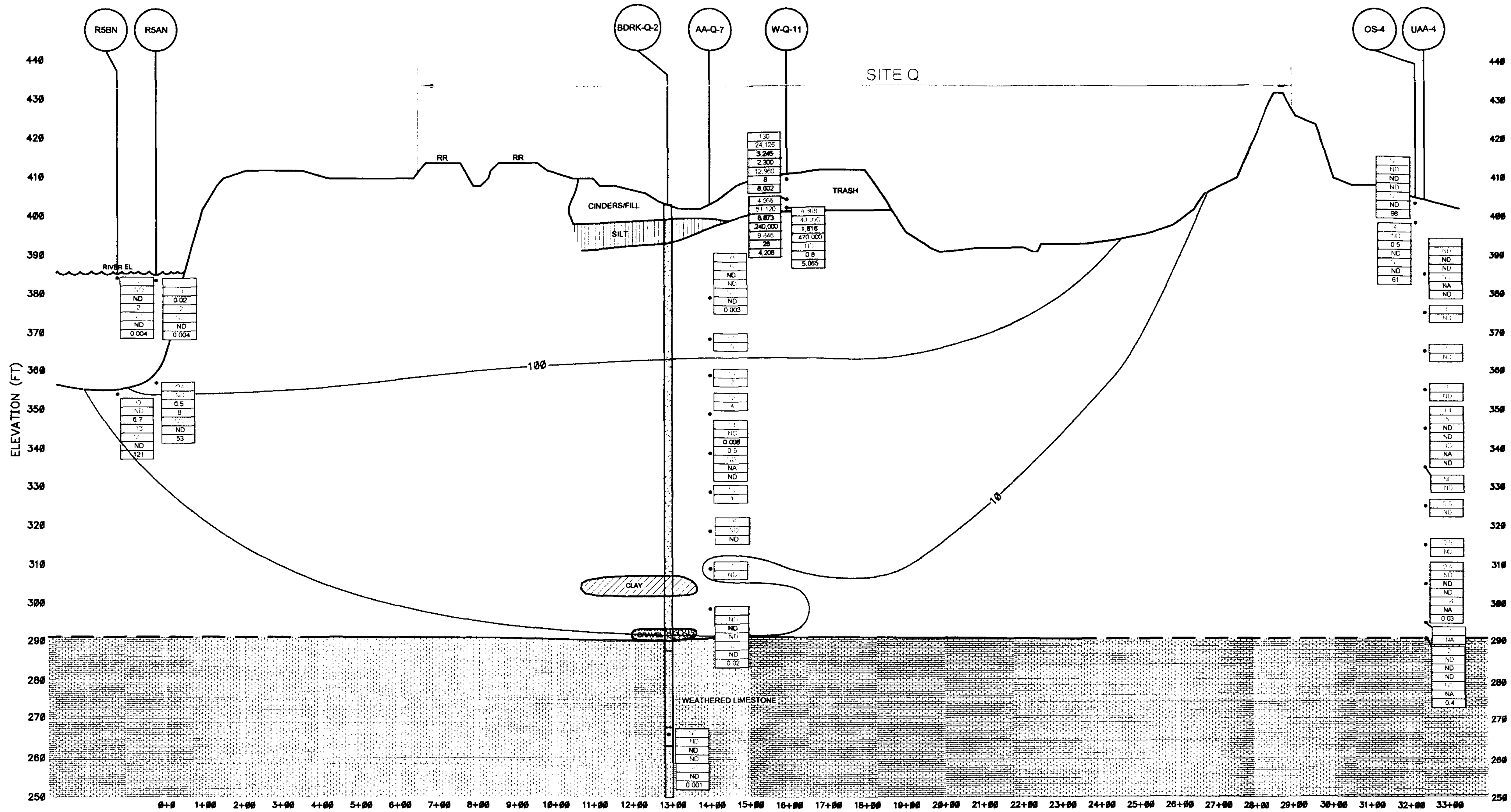
VOC (ppb)

R2BU - RIVER SAMPLE - SURFACE WATER & SEDIMENT
AA - ALLUVIAL AQUIFER
BDRK - BEDROCK MONITORING WELL
L - LEACHATE MONITORING WELL
W - SOIL/WASTE SAMPLE
OS - OFF SITE SOIL SAMPLE
UAA - UPGRADIENT ALLUVIAL AQUIFER
WASTE SAMPLE - VOCs & DIOXIN SAMPLES COLLECTED AT THE SPECIFIED INTERVAL. THE REST OF ANALYTES COLLECTED FROM COMPOSITE

NOTES:
1) ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)
2) * TOTAL METALS - INCLUDE TOTAL FOR ONLY COPPER, LEAD, MERCURY, AND ZINC.
3) BEDROCK WELL AND LEACHATE DATA FROM SEPTEMBER 2002 SAMPLING EVENT

0 30
VERTICAL SCALE
0 300
HORIZONTAL SCALE

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Geologic Cross Section D-D' — FIG. NO. 6-5



LEGEND

TOTAL VOCs
TOTAL SVOCs
TOTAL PESTICIDES
TOTAL HERBICIDES
TOTAL PCBs
TOTAL DIOXIN
TOTAL METALS

TOTAL VOCs
TOTAL SVOCs
TOTAL DIOXIN

TOTAL VOCs
TOTAL SVOCs

— · — · — SVOC (ppb)

———— VOC (ppb)

ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)

R2BU - RIVER SAMPLE - SURFACE WATER & SEDIMENT
AA - ALLUVIAL AQUIFER
BDRK - BEDROCK MONITORING WELL
L - LEACHATE MONITORING WELL
W - SOIL/WASTE SAMPLE
OS - OFF SITE SOIL SAMPLE
UAA - UPGRADIENT ALLUVIAL AQUIFER
WASTE SAMPLE - VOCs & DIOXIN SAMPLES COLLECTED AT THE SPECIFIED INTERVAL. THE REST OF ANALYTES COLLECTED FROM COMPOSITE

NOTES:
1) ALL CONCENTRATIONS IN ppb EXCEPT METALS (ppm)
2) * TOTAL METALS - INCLUDE TOTAL FOR ONLY COPPER, LEAD, MERCURY, AND ZINC.
3) BEDROCK WELL AND LEACHATE DATA FROM SEPTEMBER 2002 SAMPLING EVENT

0 30
VERTICAL SCALE
0 300
HORIZONTAL SCALE

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Geologic Cross Section E-E' — FIG. NO. 6-6

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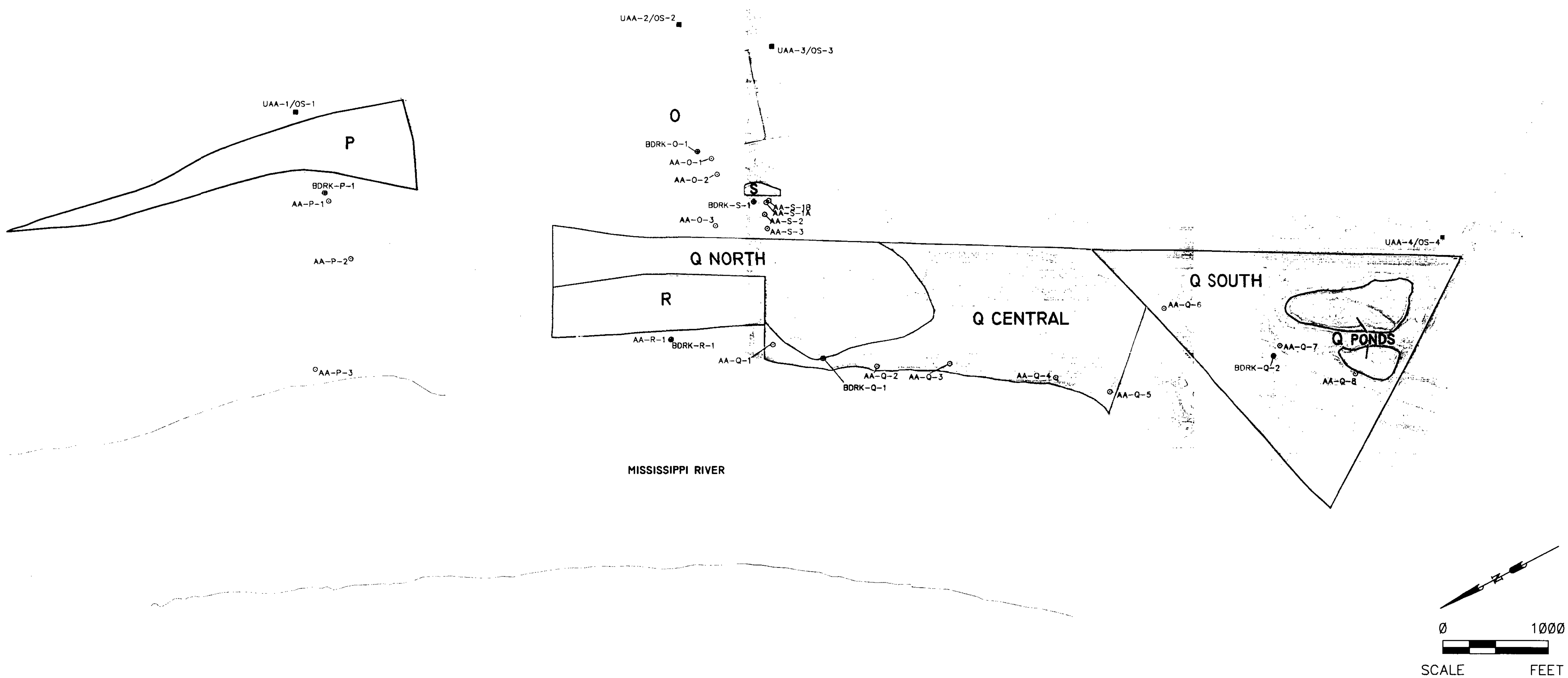

LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well

NOTES:
All locations have at least one exceedance of an IEPA Class I Groundwater Standard

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Locations with Exceedances of IEPA Class I Groundwater Standards — FIG. NO. 6-7

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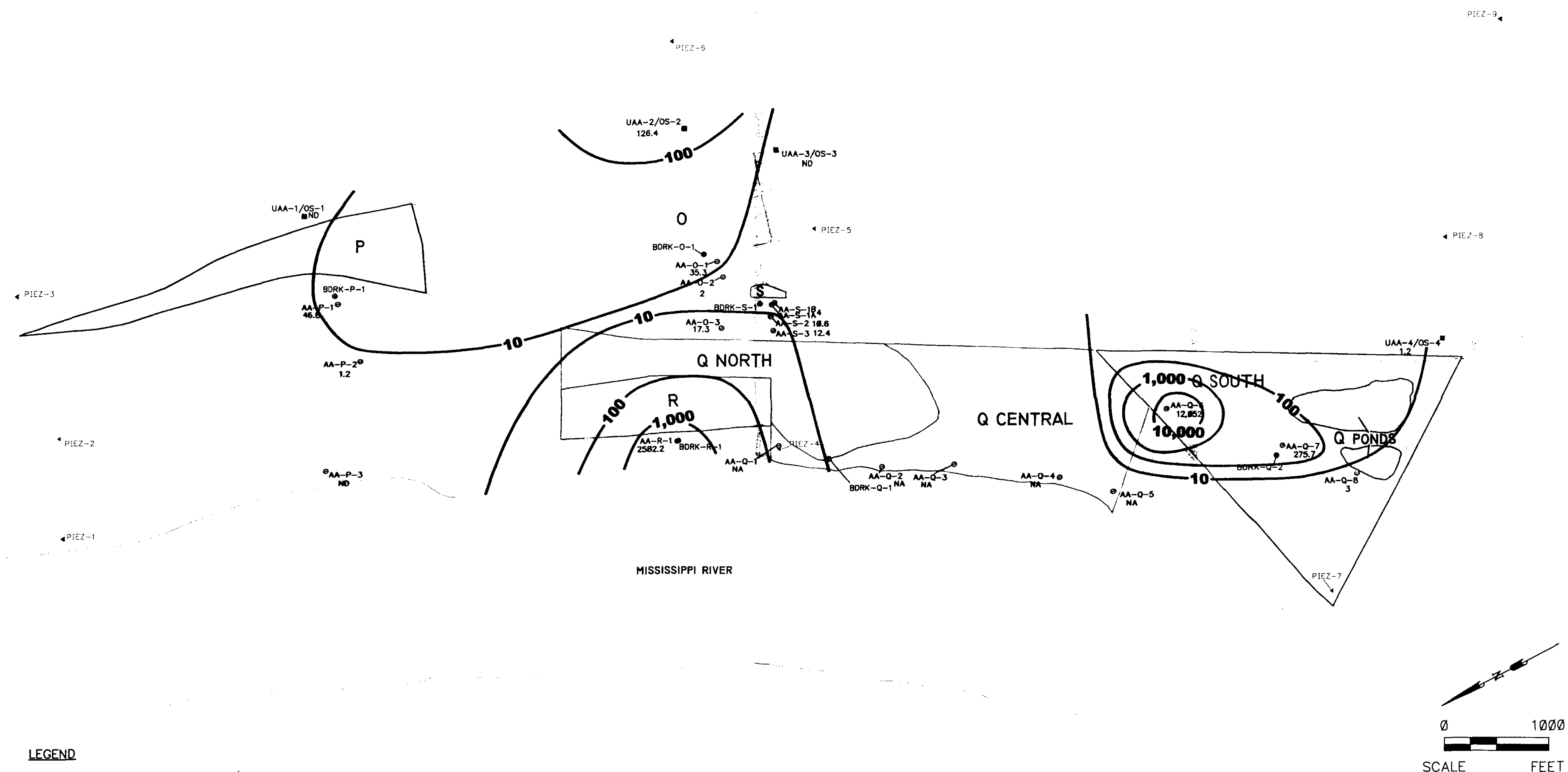


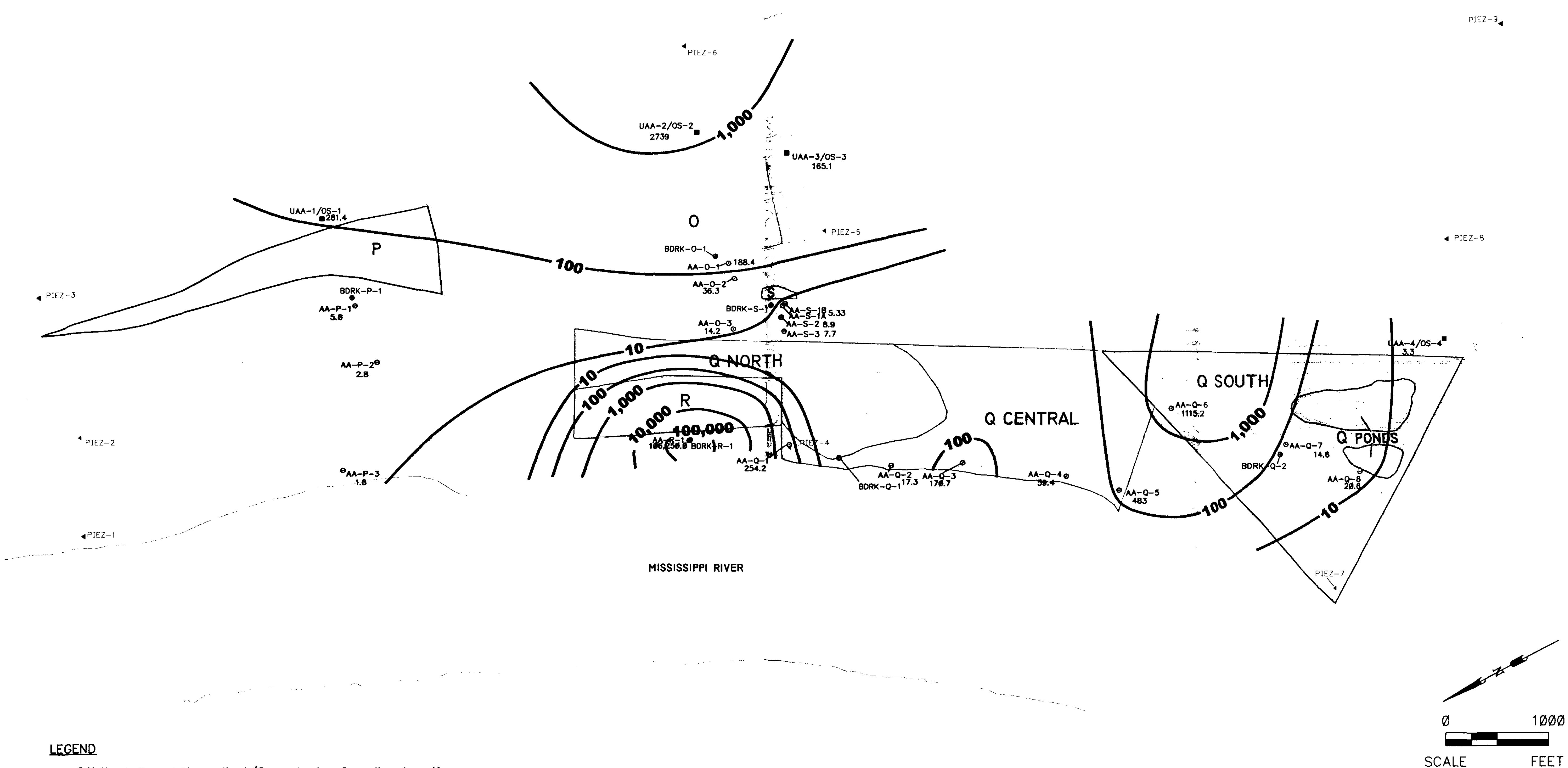
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– The values are the maximum values for the SHU – ~0 – 40ft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total VOCs Isoconcentration Map Shallow	FIG. NO. 7-1a

File: E:\21560888.04001\REPORTS\RI_FS_REPORT\7-1A.DWG Last edited: 12/16/03 @ 1:35 p.m. WC-ST.LOUIS, MO

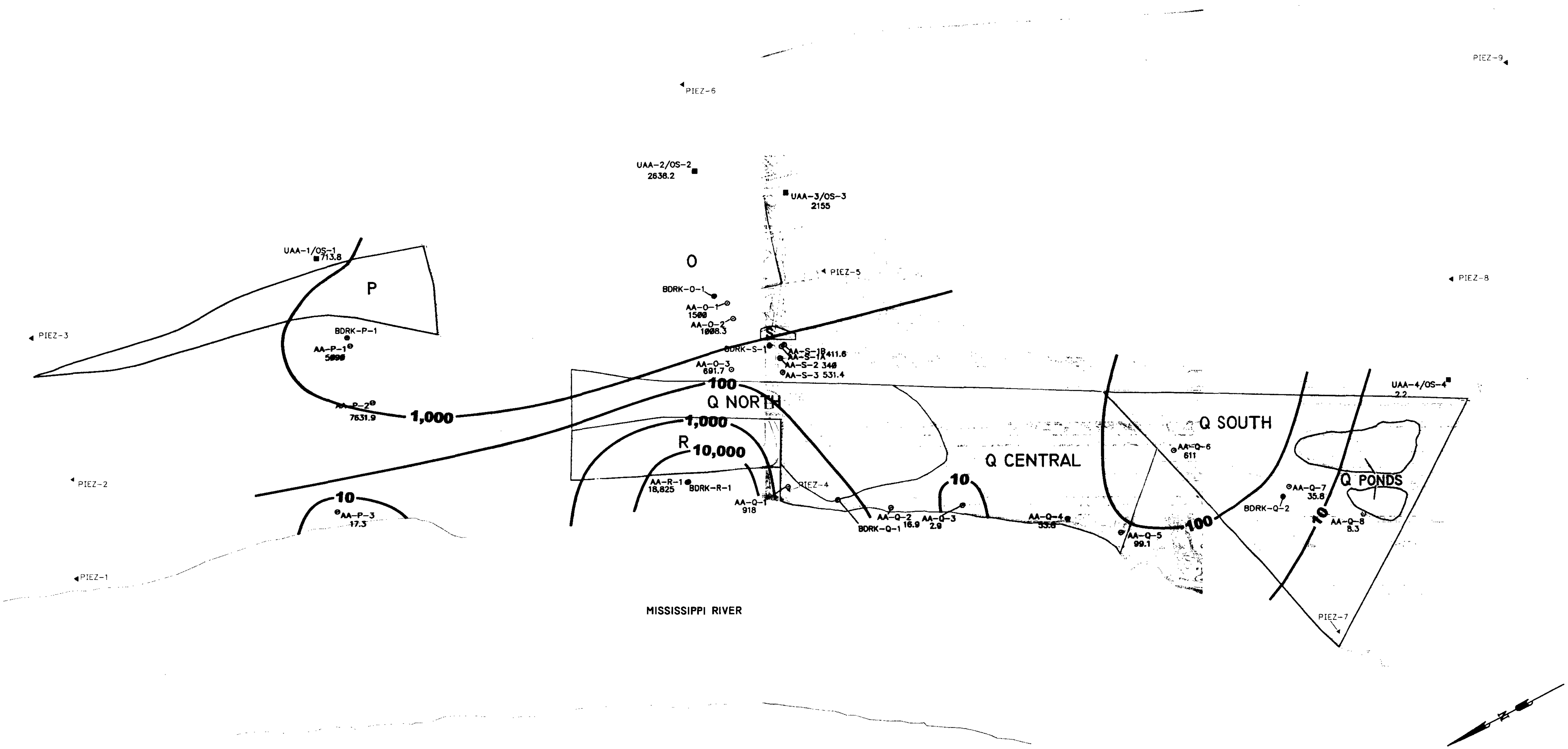


LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– The values are the maximum values for the MHU – ~41 – 8Øft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 2156Ø888.Ø7ØØ1
URS	
DRN. BY:djd 1Ø/7/Ø3 DSGN. BY:bh CHKD. BY:	Total VOCs Isoconcentration Map Medium
FIG. NO.	7–1b



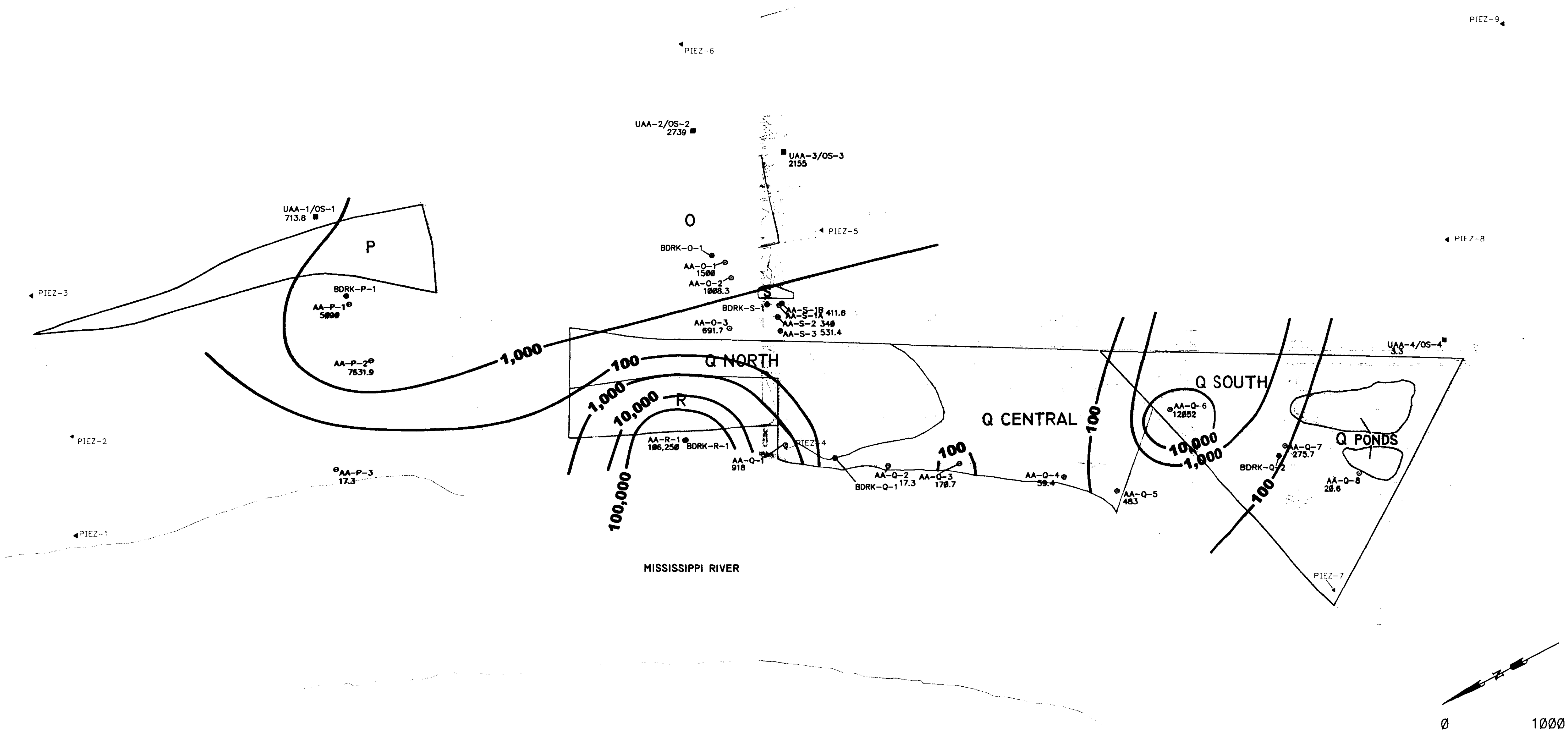
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- —100— Concentration Contour (ppb)

NOTE:
- The values are the maximum values for the DHU – ~81 – 132ft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total VOCs Isoconcentration Map Deep	FIG. NO. 7-1c

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-1C.DWG Last edited: 12/16/03 @ 1:37 p.m. WC-ST.LOUIS, MO



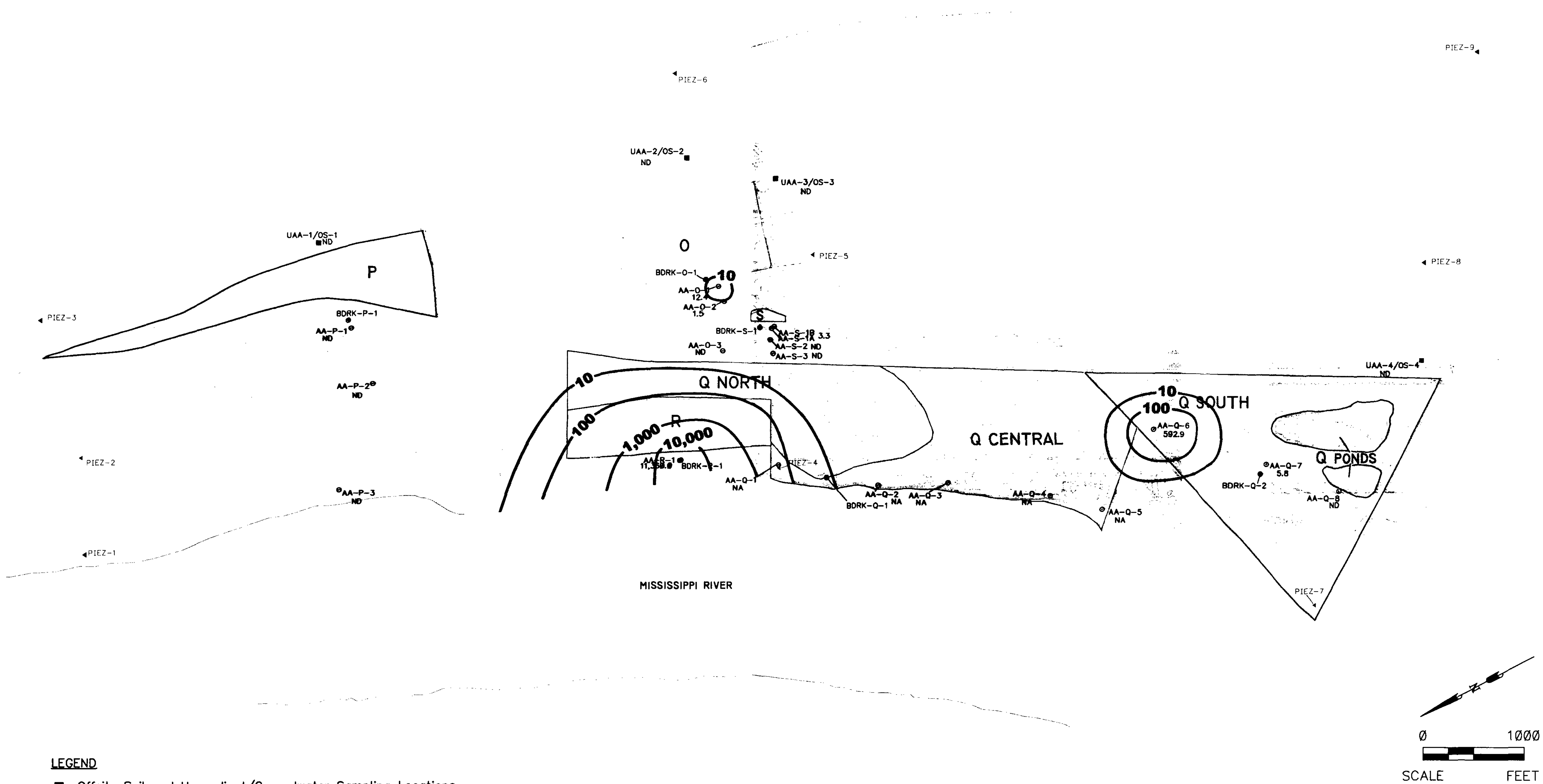
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- —100— Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total VOCs Isoconcentration Map Composite — FIG. NO. 7-1d

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-1D.DWG Last edited: 12/16/03 @ 1:38 p.m. WC-ST.LOUIS, MO



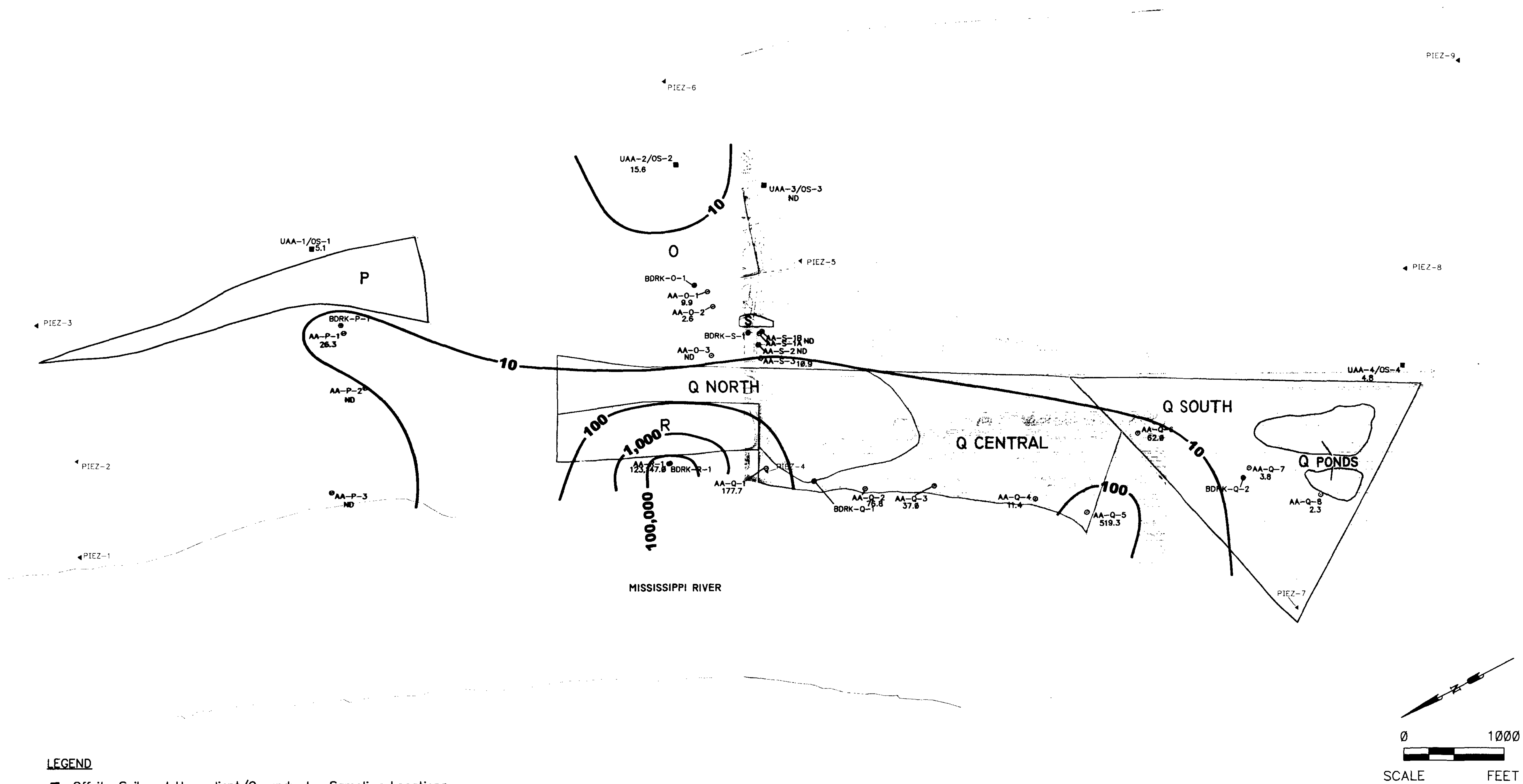
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– The values are the maximum values for the SHU – ~0 – 40ft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total SVOCs Isoconcentration Map Shallow
FIG. NO.	7-2a

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-2A.DWG Last edited: 12/16/03 @ 1:39 p.m. WC-ST.LOUIS, MO



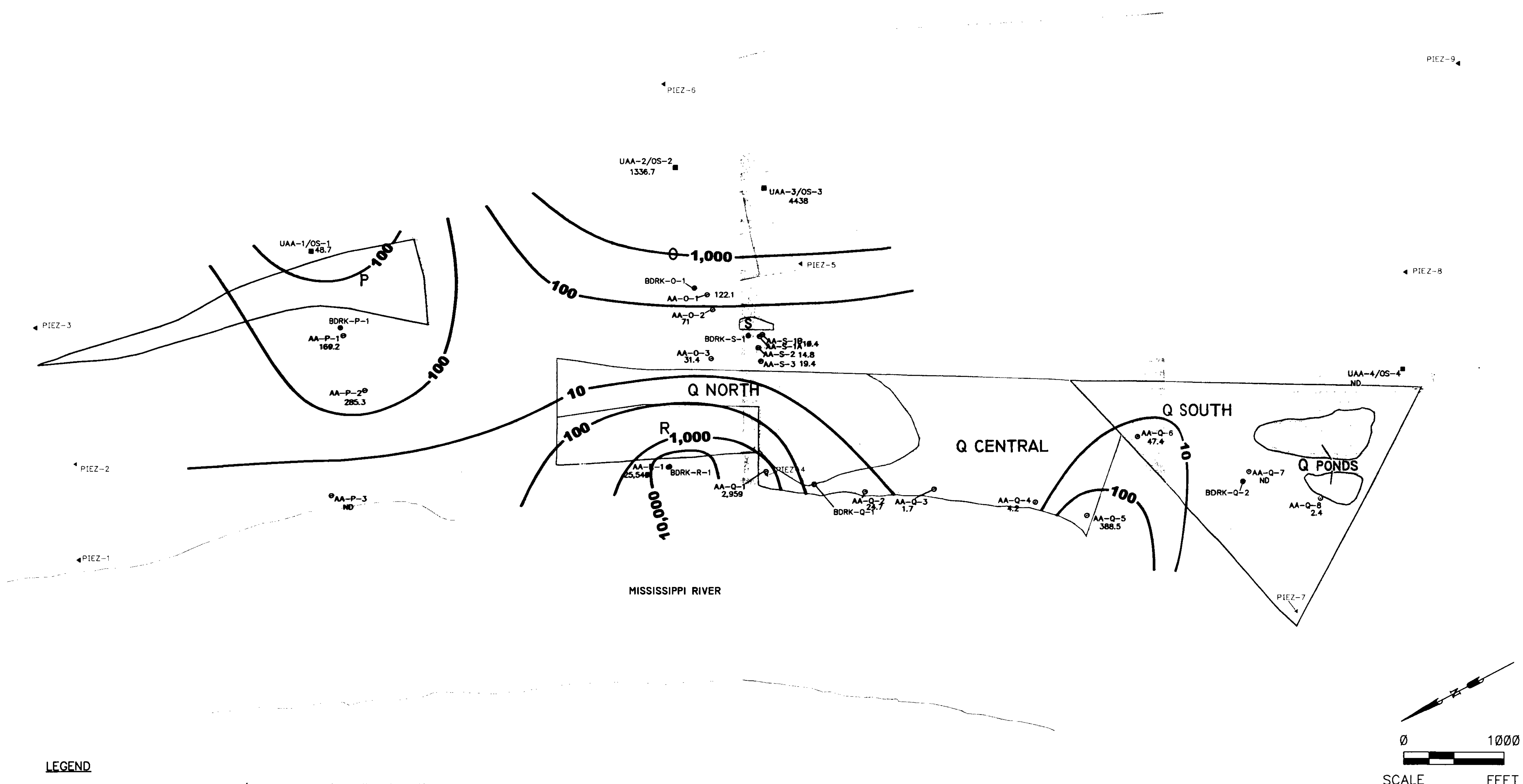
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- —100— Concentration Contour (ppb)

NOTE:
- The values are the maximum values for the MHU - ~41 - 80ft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total SVOCs Isoconcentration Map Medium
FIG. NO.	7-2b

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-2B.DWG Last edited: 12/16/03 @ 1:41 p.m. WC-ST.LOUIS, MO



LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- —100— Concentration Contour (ppb)

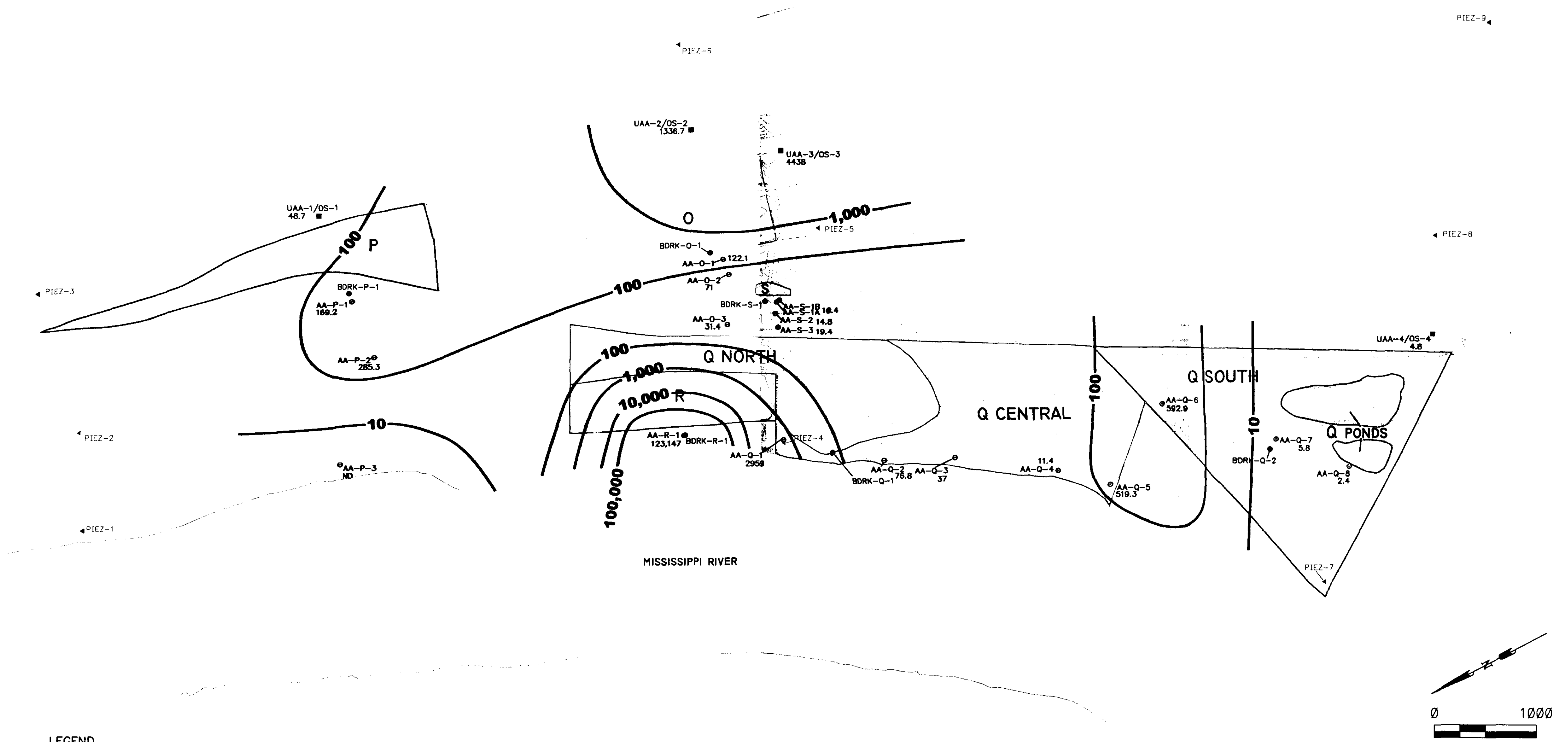
NOTE:
- The values are the maximum values for the DHU - ~81 - 132ft bgs

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total SVOCs Isoconcentration Map Deep	FIG. NO. 7-2c

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-2C.DWG Last edited: 12/16/03 @ 1:41 p.m. WC-ST.LOUIS, MO



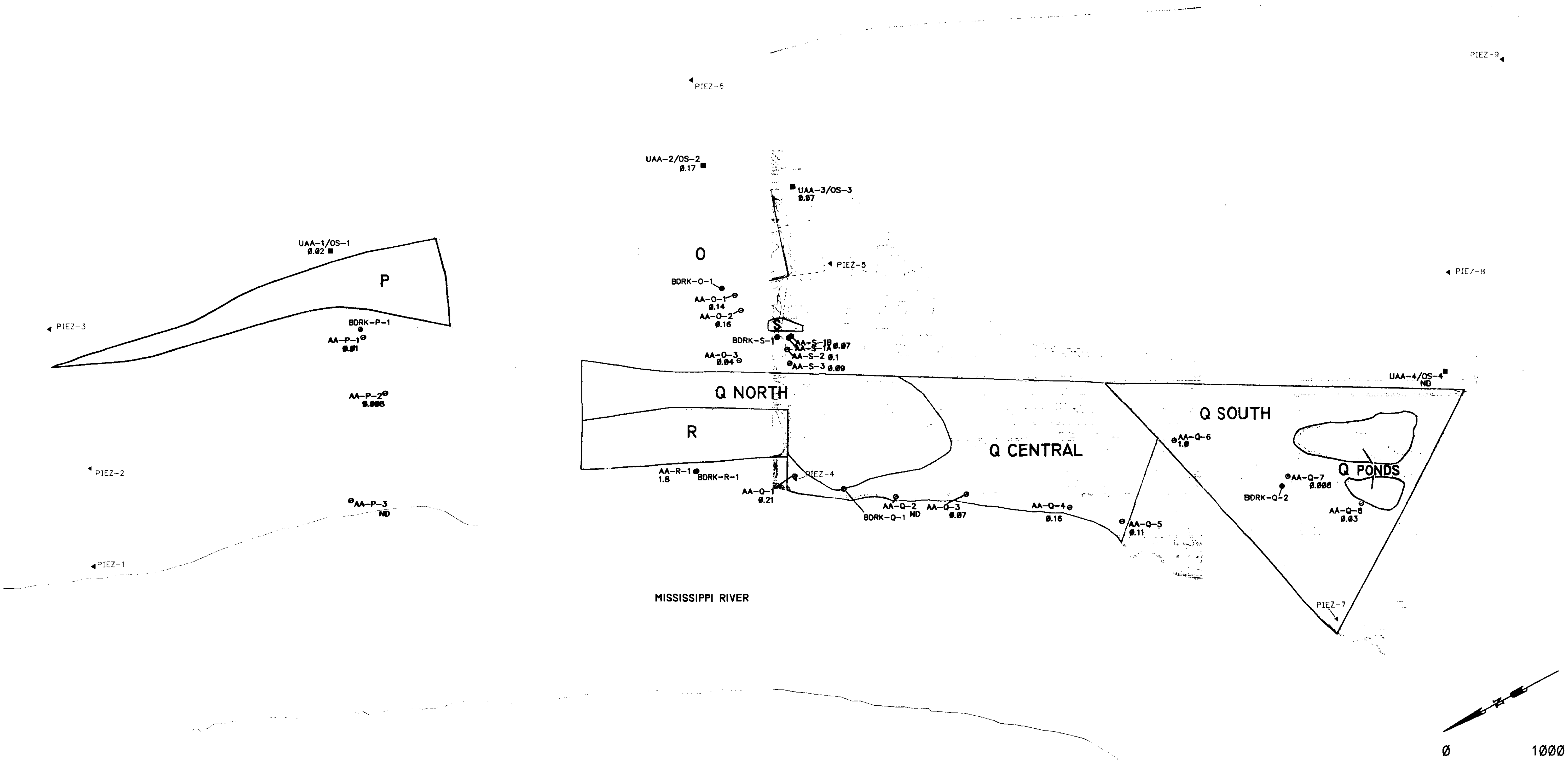
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- —100— Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total SVOCs Isoconcentration Map Composite — FIG. NO. 7-2d

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-2D.DWG Last edited: 12/16/03 @ 1:42 p.m. WC-ST.LOUIS, MO

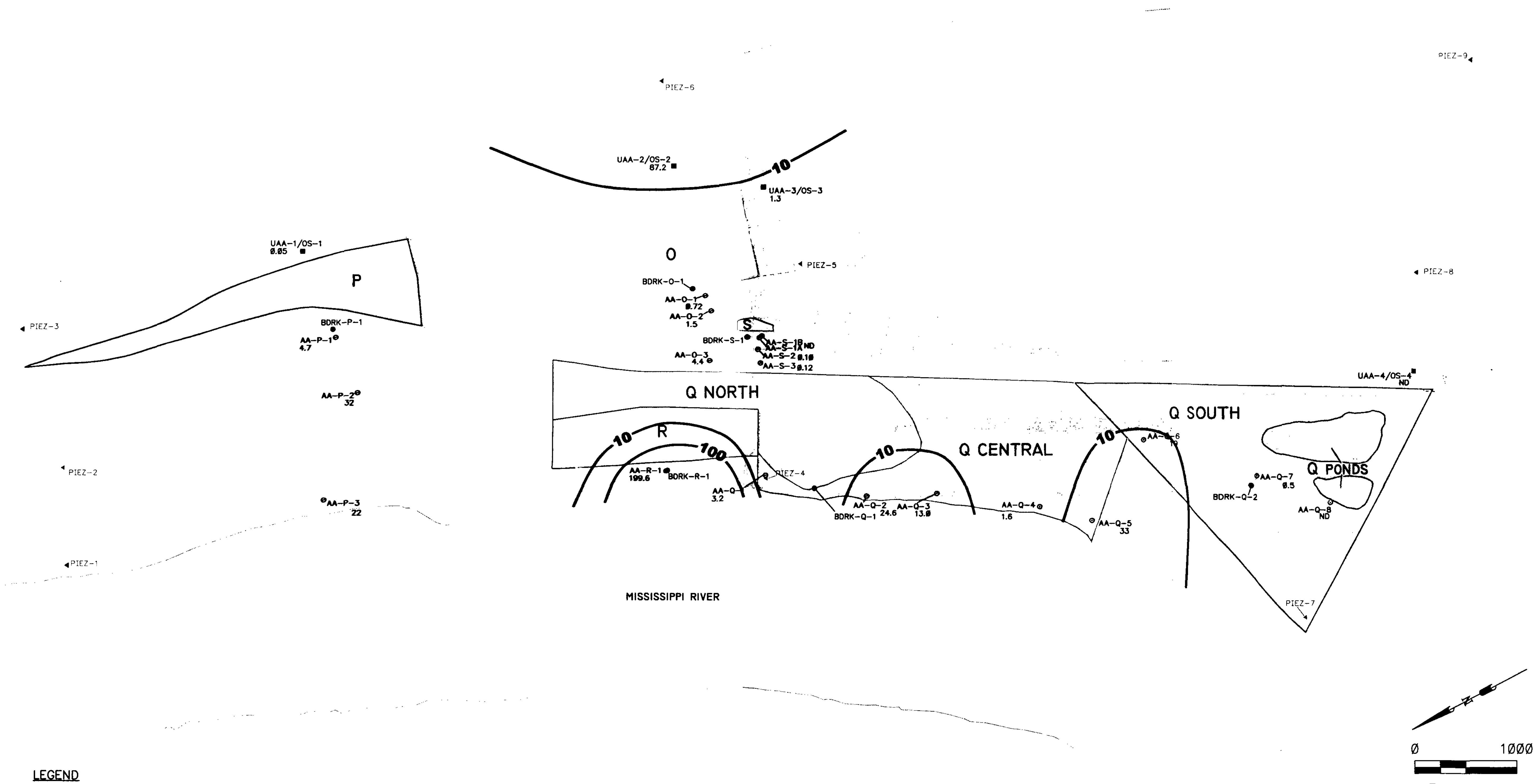


LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	**Total Pesticides Isoconcentration Map Composite**
FIG. NO. 7-3	



LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

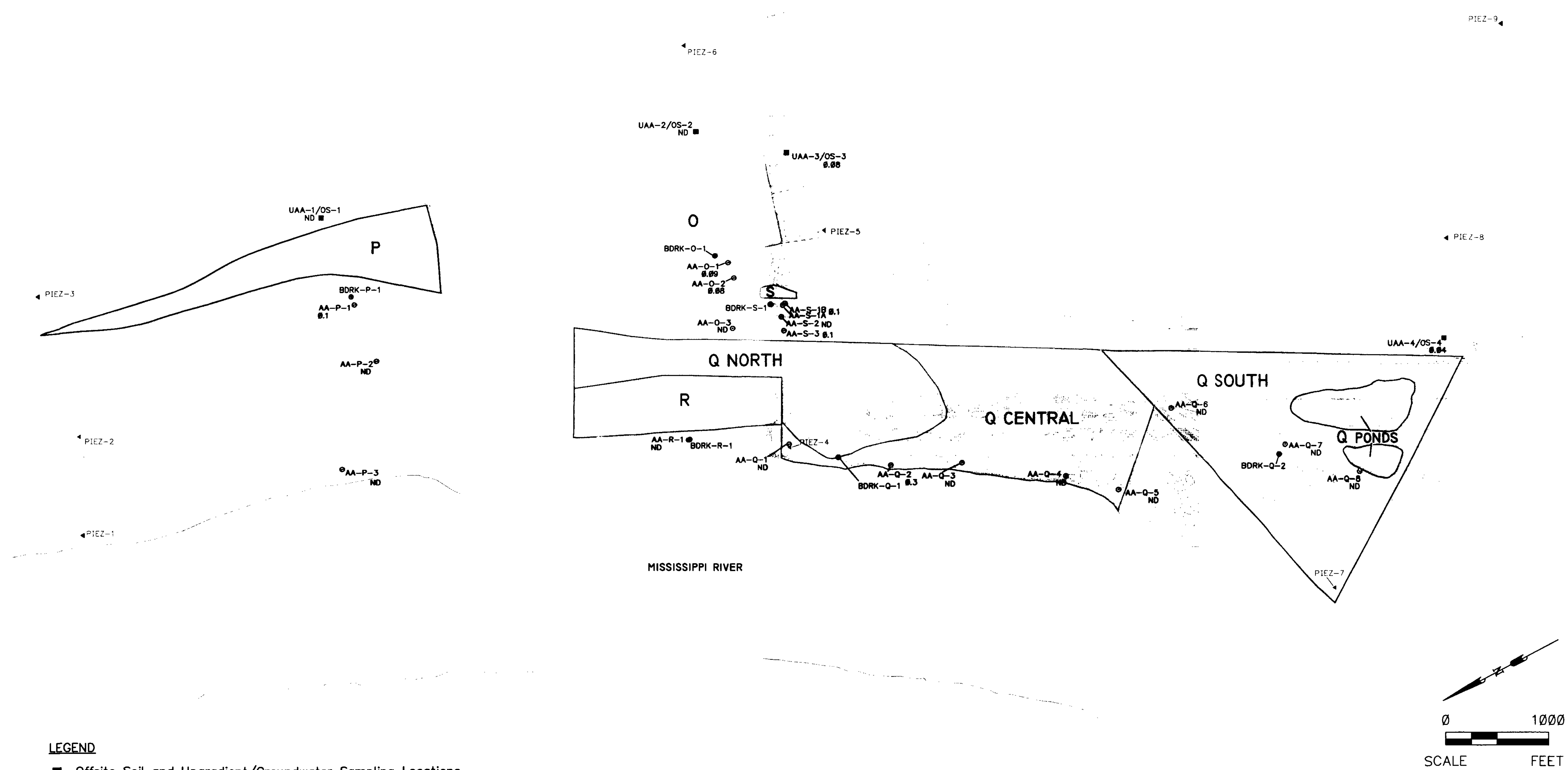
NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001

URS

DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total Herbicides Isoconcentration Map Composite	FIG. NO. 7–4

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-4.DWG Last edited: 12/16/03 @ 1:46 p.m. WC-ST.LOUIS, MO



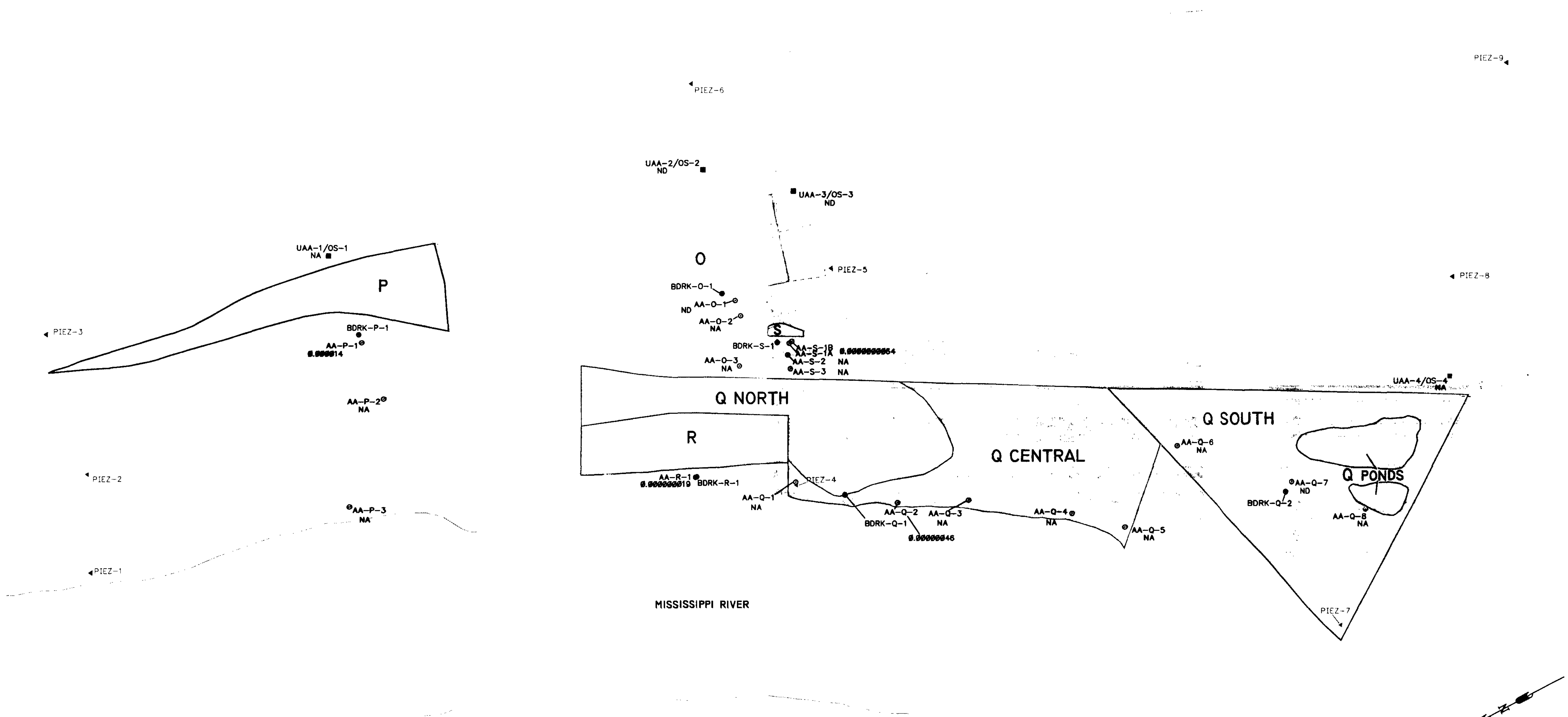
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

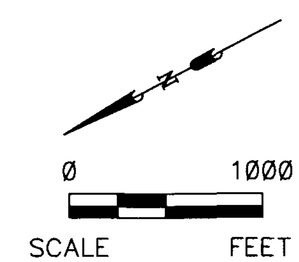
SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Total PCBs Isoconcentration Map Composite	FIG. NO. 7-5

File: E:\21560888.04001\REPORTS\RI_FS_REPORT\7-5.DWG Last edited: 12/16/03 @ 1:47 p.m. WC-ST.LOUIS, MO



NOTES:
– Concentrations – Maximum concentration over entire depth interval

– TEQ value for individual samples



LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	2,3,7,8–TCDD TEQ Isoconcentration Map Composite	FIG. NO. 7–6

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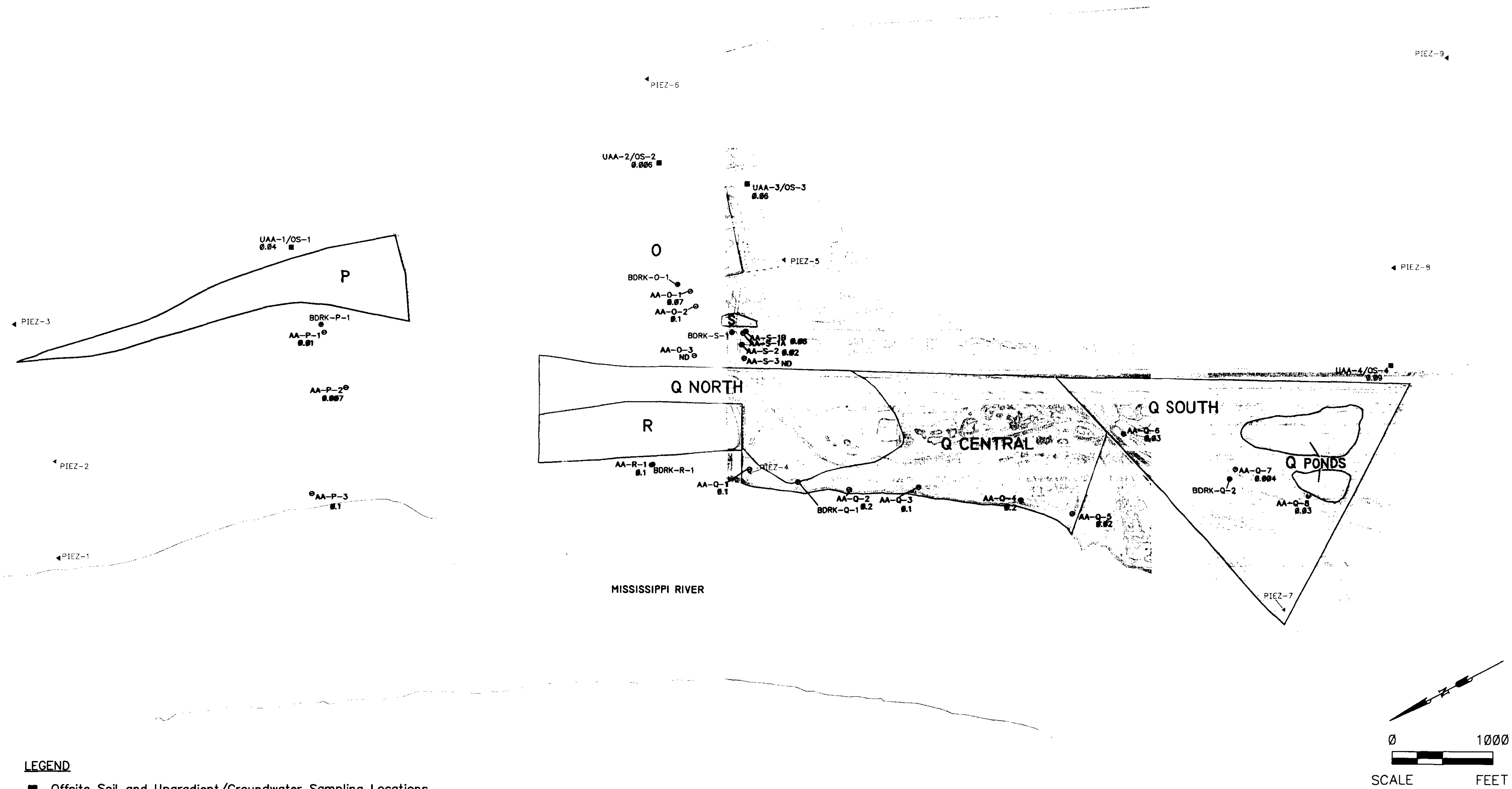


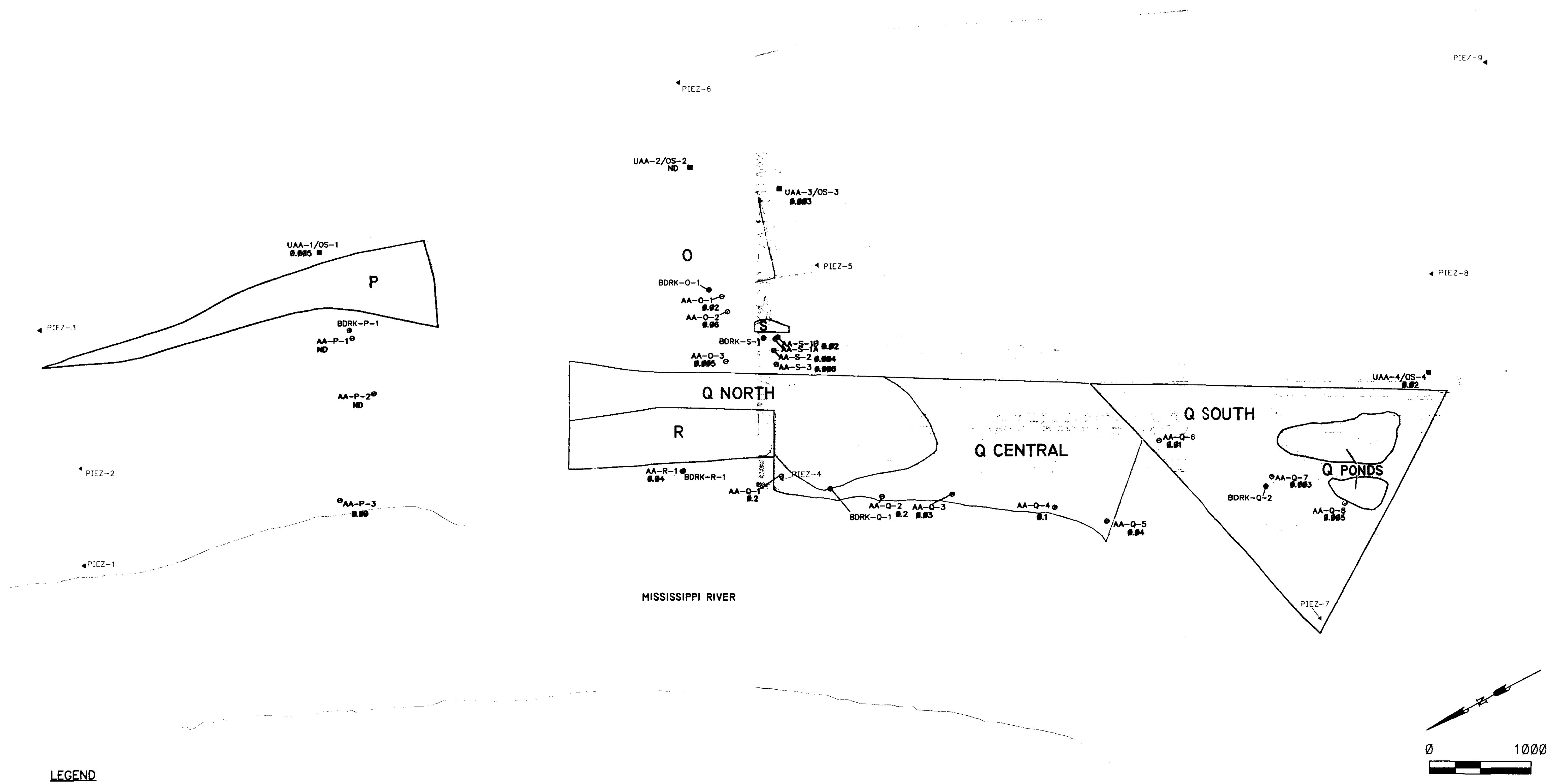
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Copper Isoconcentration Map Composite
FIG. NO. 7–7	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-7.DWG Last edited: 12/16/03 @ 1:49 p.m. WC-ST.LOUIS, MO



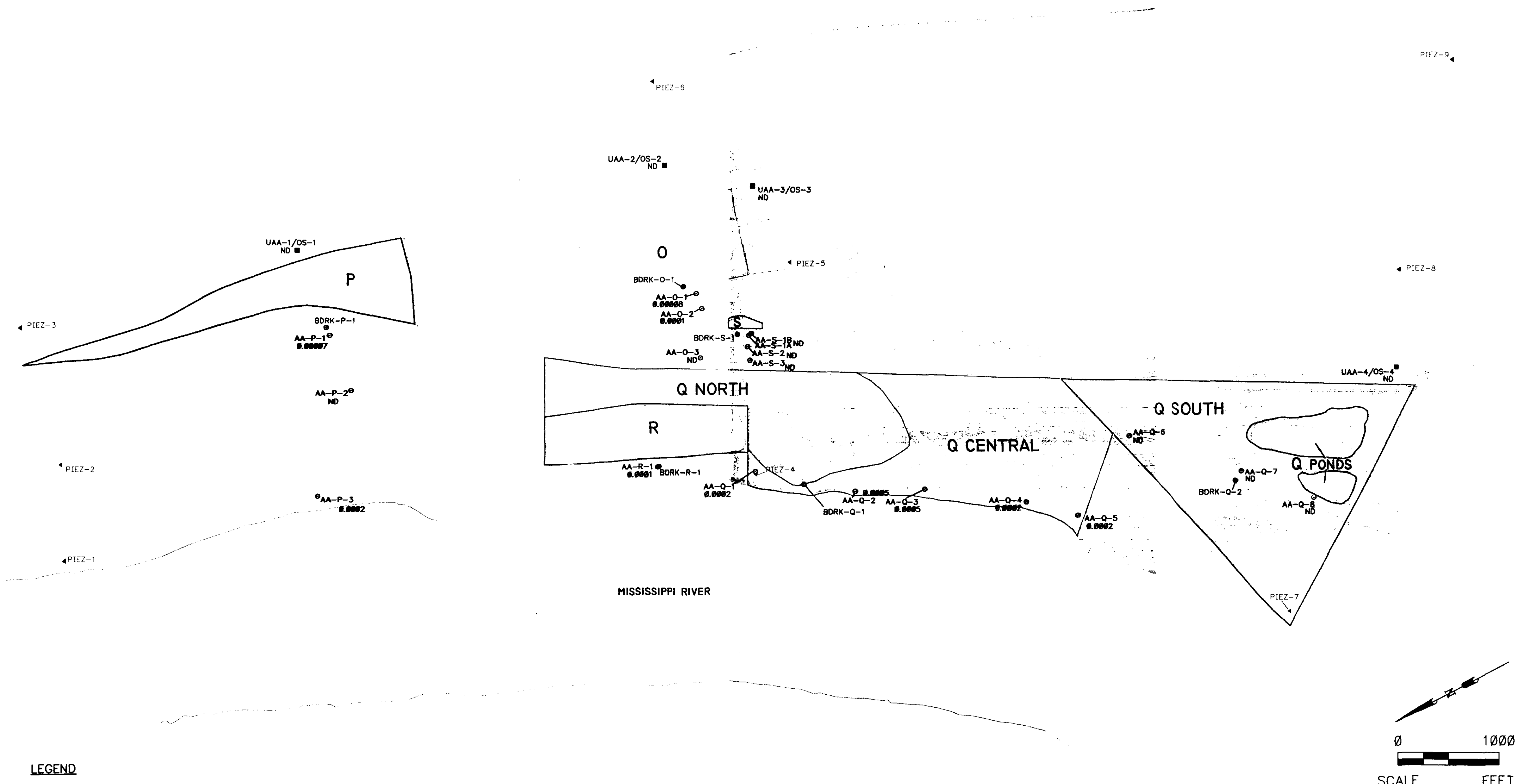
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Lead Isoconcentration Map Composite
FIG. NO. 7-8	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-8.DWG Last edited: 12/15/03 @ 1:49 p.m. WC-ST.LOUIS, MO



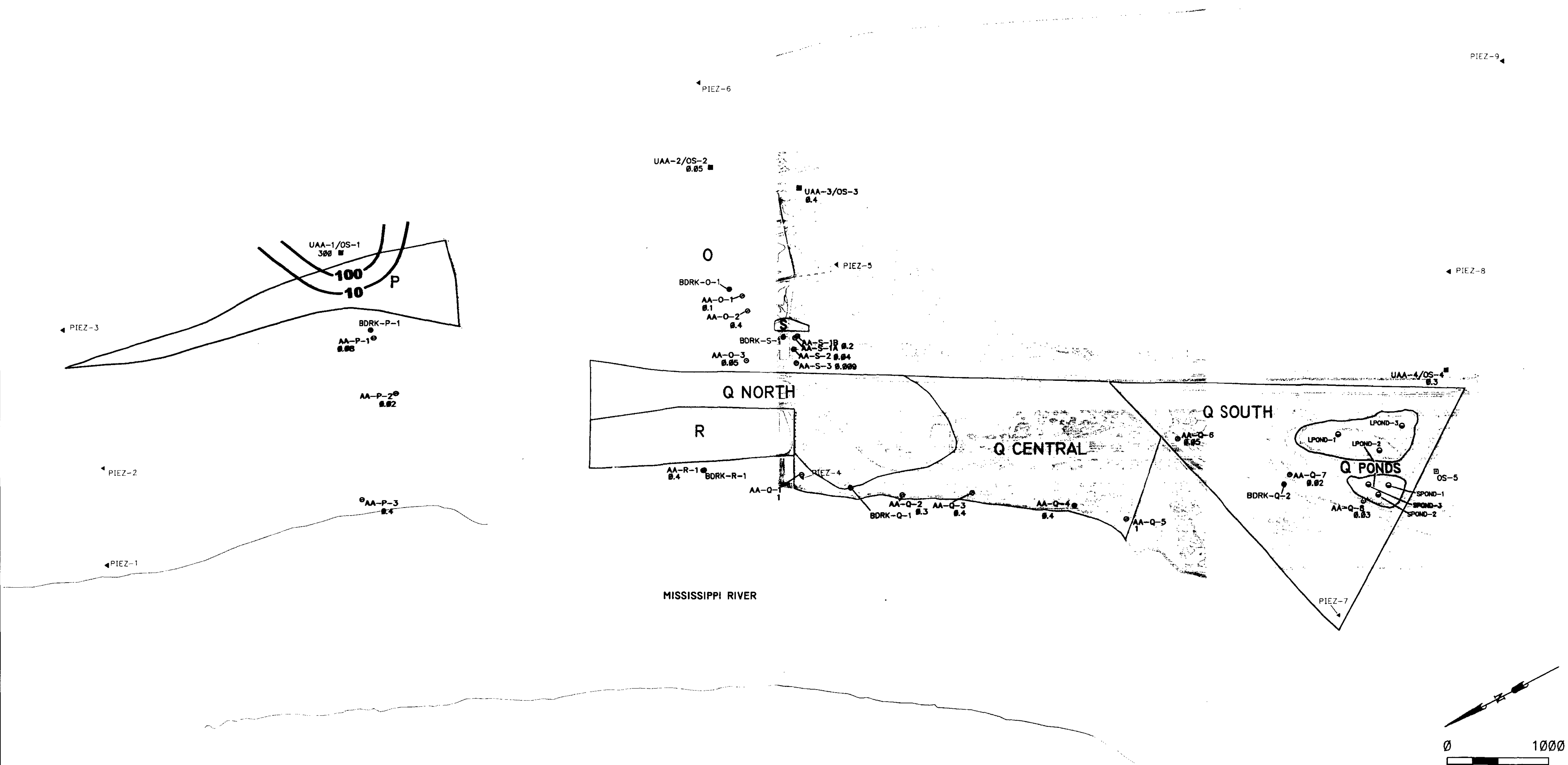
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Mercury Isoconcentration Map Composite — FIG. NO. 7-9

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-9.DWG Last edited: 12/16/03 @ 1:51 p.m. WC-ST.LOUIS, MO

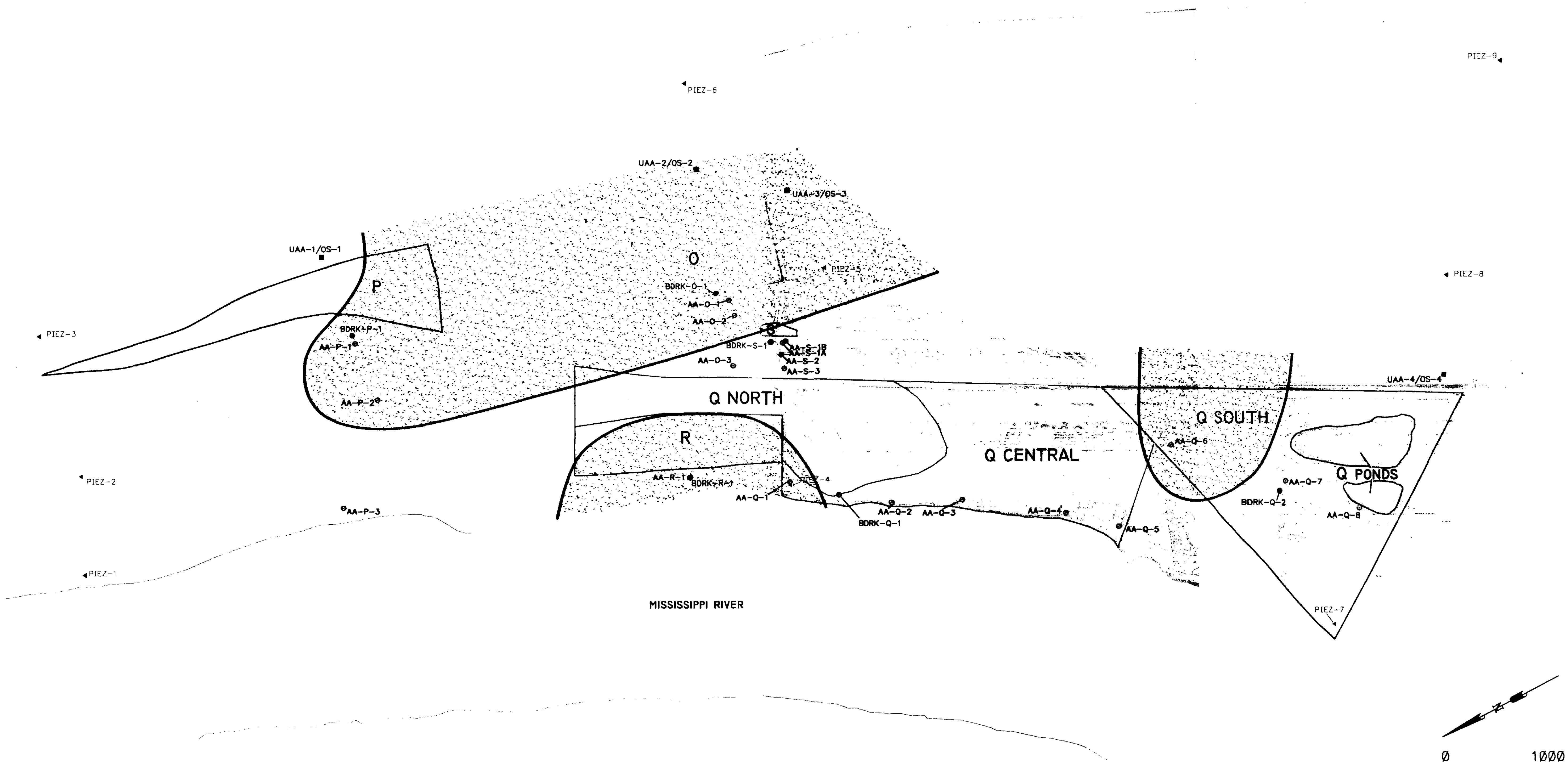


LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site–Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location
- **—100—** Concentration Contour (ppb)

NOTE:
– Concentrations – Maximum concentration over entire depth interval

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Zinc Isoconcentration Map Composite — FIG. NO. 7–10



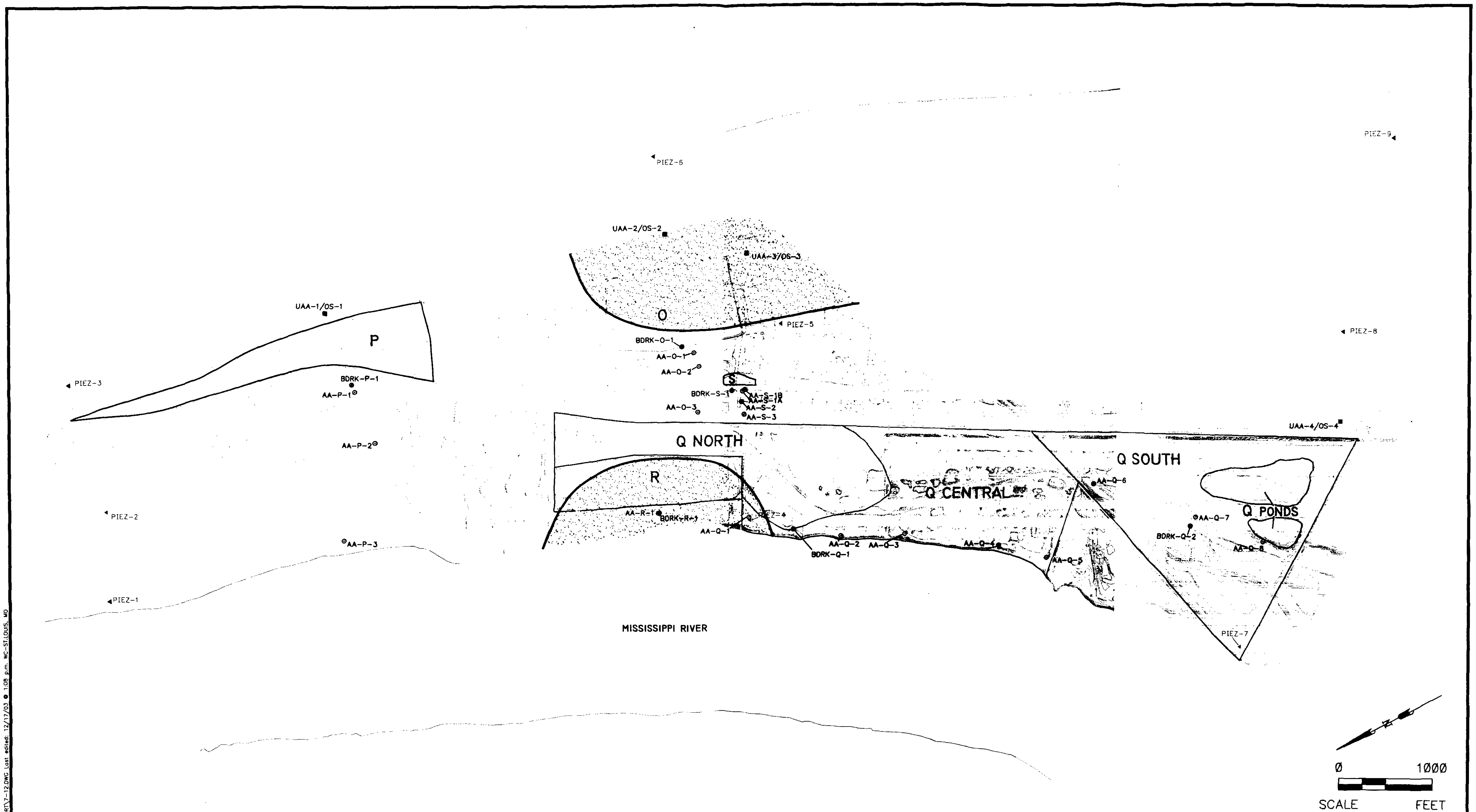
LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location

NOTES:
The edge of the plumes are the 1,000 ppb contour lines

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Groundwater Plume Map (VOC)
FIG. NO. 7-11	

File: E:\21560888.04001\REPORTS\RI_FS REPORT\7-11.DWG Last edited: 12/16/03 @ 1:52 p.m. WC-ST.LOUIS, MO

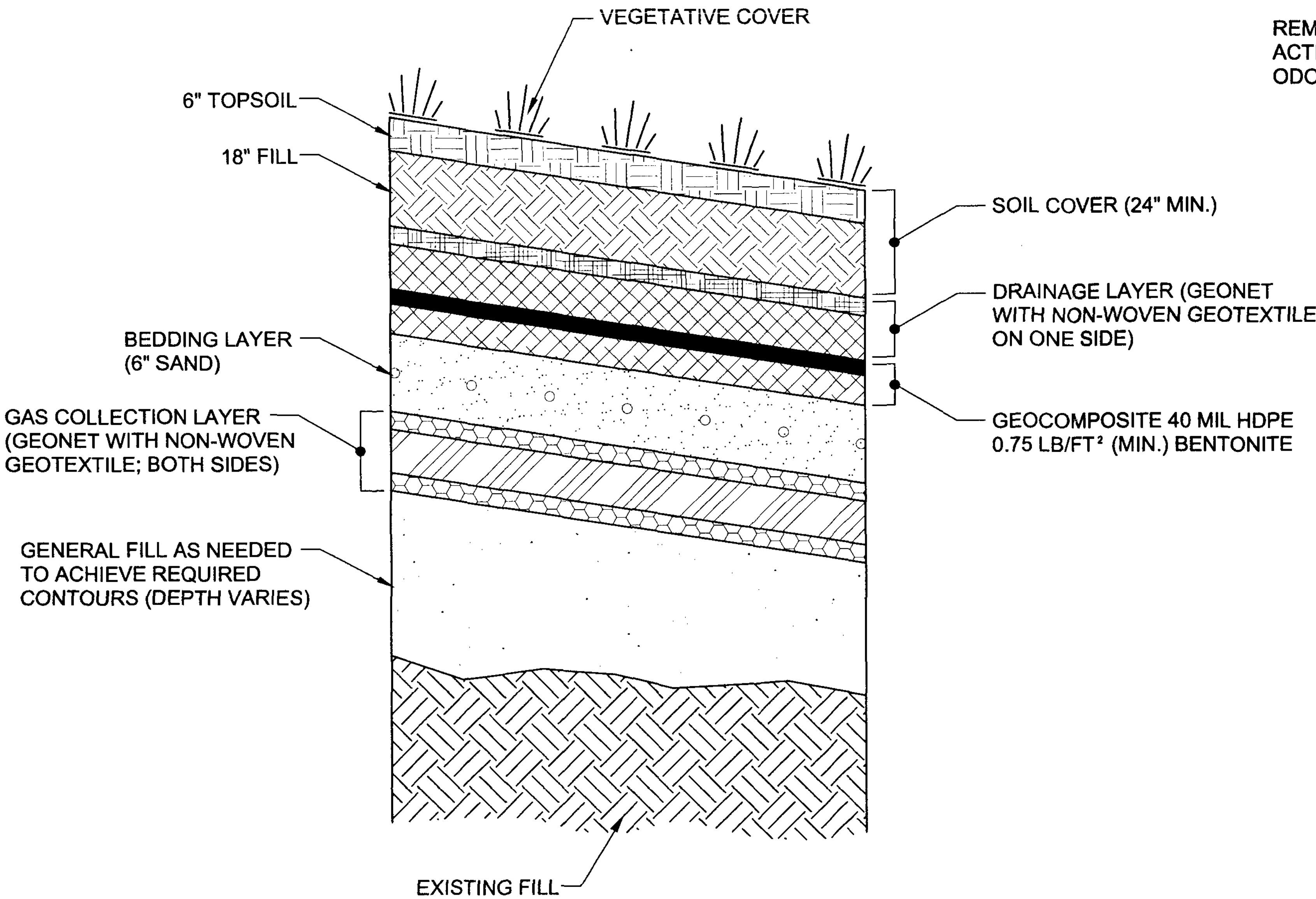


LEGEND

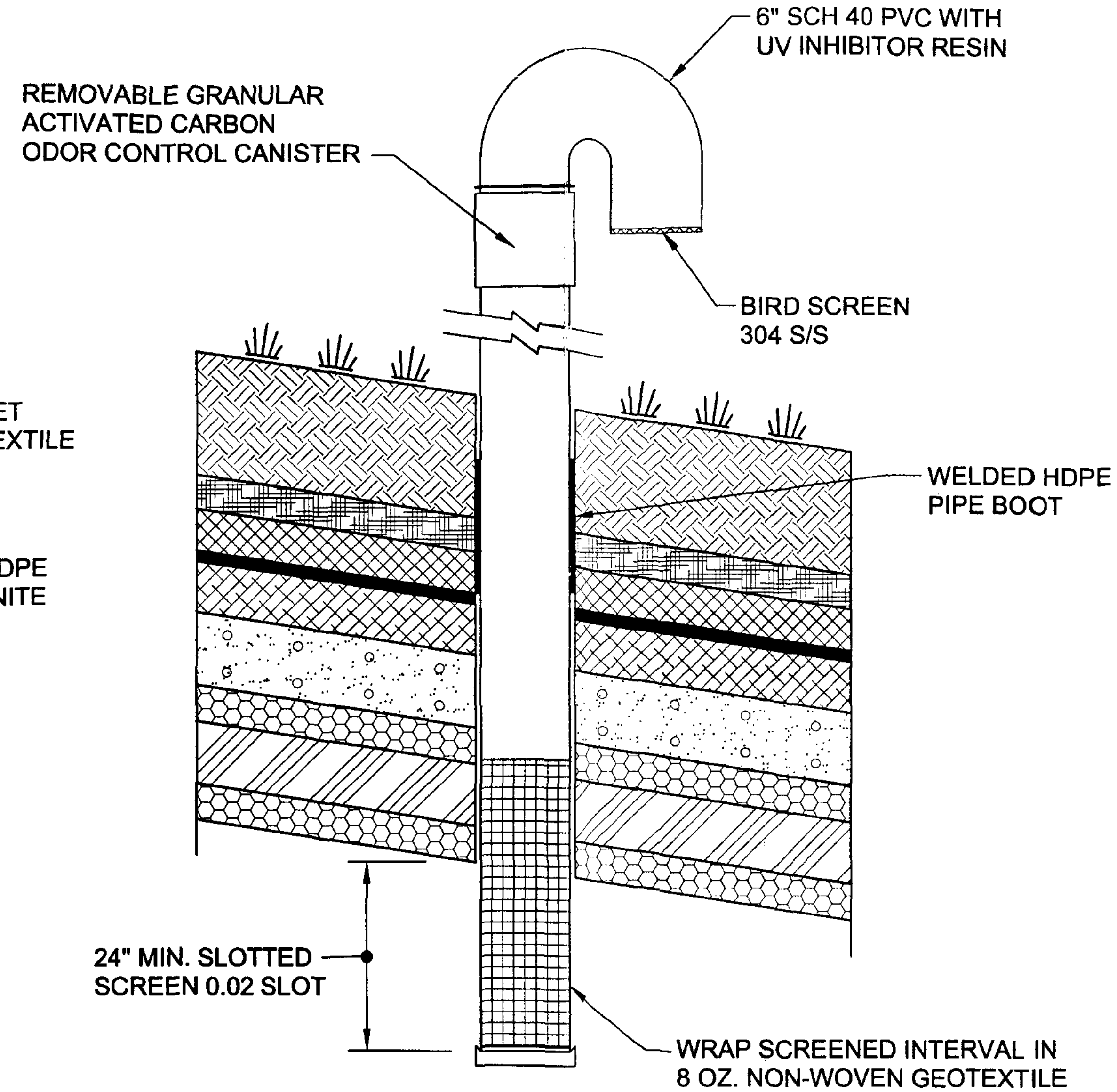
- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- △ Leachate Monitoring Well Location

NOTES:
The edges of the plumes are the 1,000 ppb contour lines

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY:djd 10/7/03 DSGN. BY:bh CHKD. BY:	Groundwater Plume Map (SVOC)
FIG. NO. 7-12	



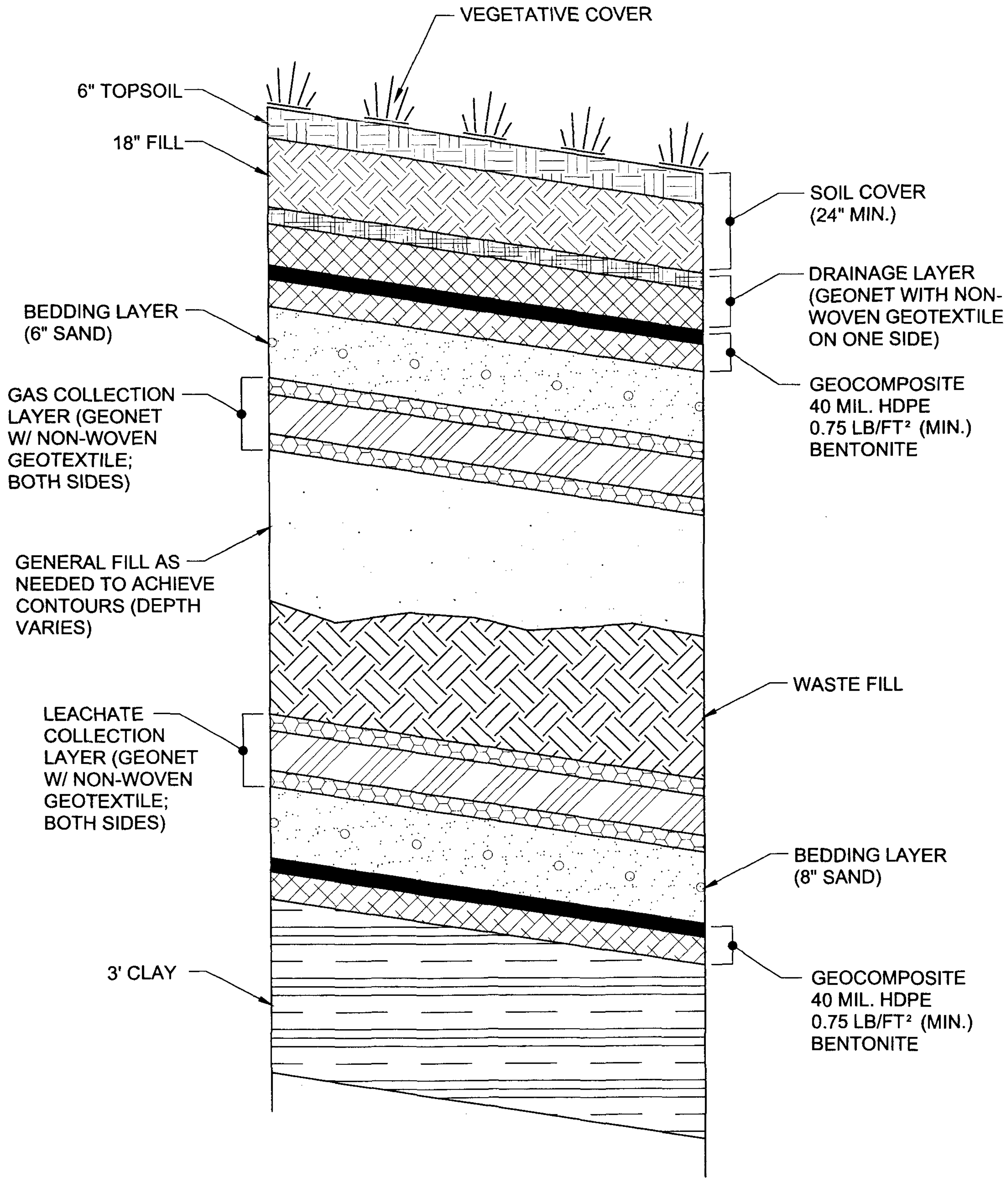
VEGETATED RCRA COVER DETAIL (TYP.)
NOT TO SCALE



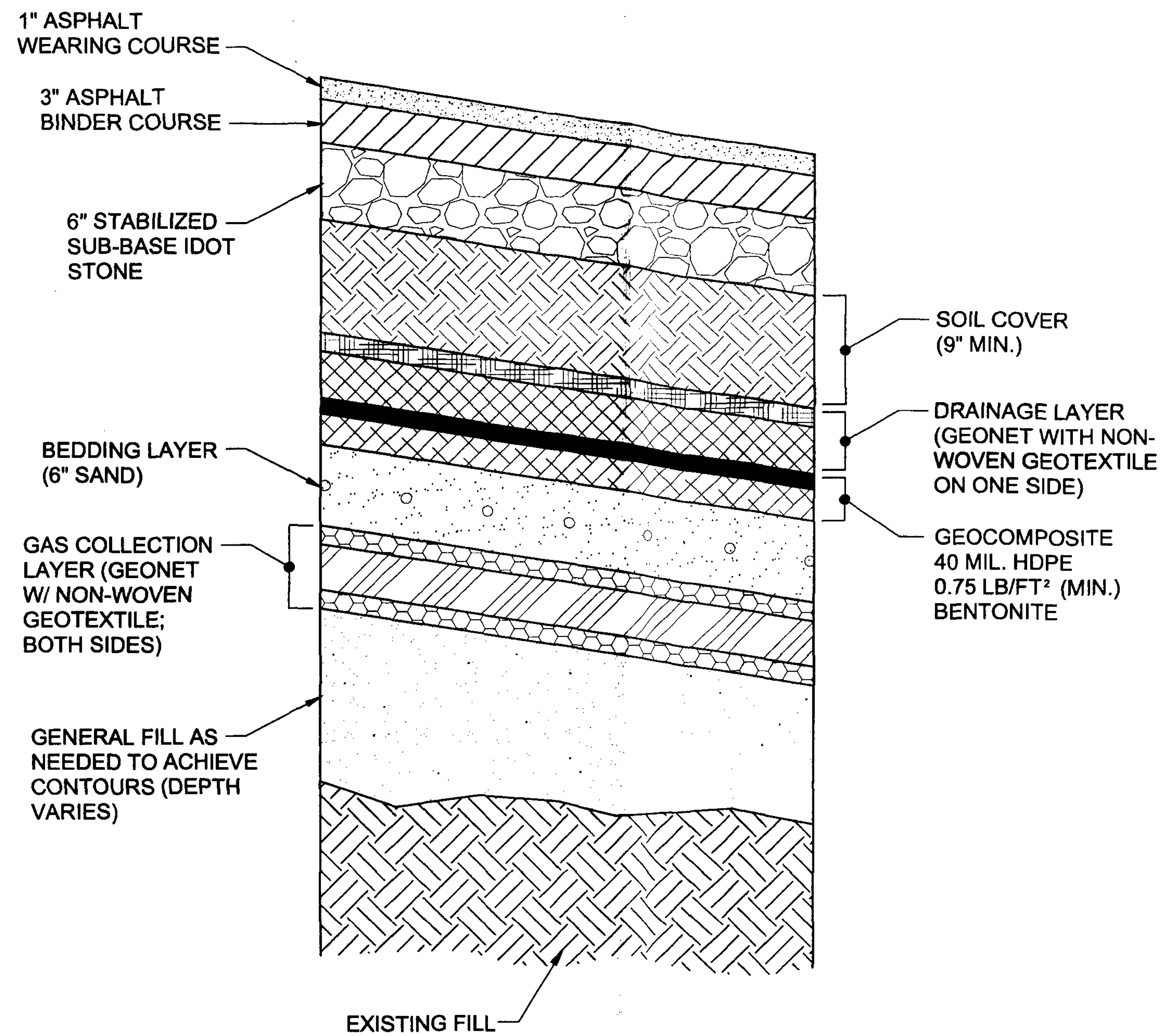
GAS VENT DETAIL (TYP.)
NOT TO SCALE

SAUGET AREA 2 LOW PERMEABILITY COVER SAUGET, ILLINOIS	PROJECT NO. 2156088.07003
URS	
DRN. BY: TMS 11-17-03 DSGN. BY: ASN CHKD. BY:	SA2 SITES "O", "O NORTH", "R", AND "S" COVER DETAILS
FIG. NO.	9-1

J:\SAUGET AREA 2\GRADING\SITE PLANS.DWG



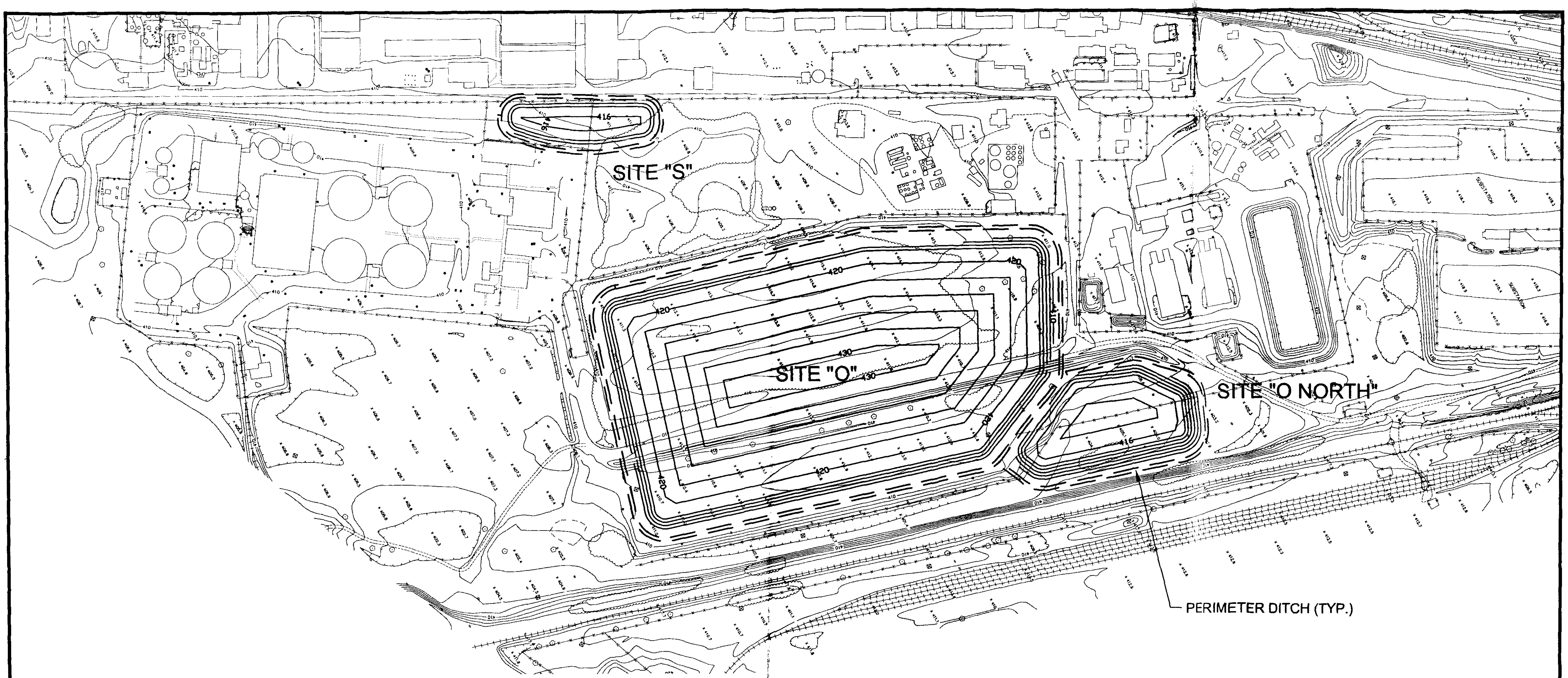
NEW RCRA CELL DETAIL (TYP.)
NOT TO SCALE



ASPHALT PAVED RCRA COVER DETAIL (TYP.)
NOT TO SCALE

SAUGET AREA 2 LOW PERMEABILITY COVER SAUGET, ILLINOIS		PROJECT NO. 2156088.07003
URS		
DRN. BY: TMS 11-17-03 DSGN. BY: ASN CHKD. BY:	SA2 SITE "Q NORTH" AND NEW RCRA CELL COVER DETAILS	FIG. NO. 9-2

J:\SAUGET AREA 2\GRADING\SITE PLANS.DWG



EMBANKMENT COVER DESIGN CRITERIA:

4% SLOPE (CENTER CROWNED)

FINISHED GRADE SHOWN, SUB-SURFACE LAYERS ARE:
- 6 INCH TOP SOIL
- 18 INCH SUITABLE FILL MATERIAL
- 18 INCH THICK LINER
- VARIABLE THICKNESS CLAY CAP (6 INCH MINIMUM)

DITCH SECTION: 3 FOOT DITCH BOTTOM, 2 FEET DEEP WITH 2:1 SIDE SLOPES, 10 FEET FROM TOE OF EMBANKMENT

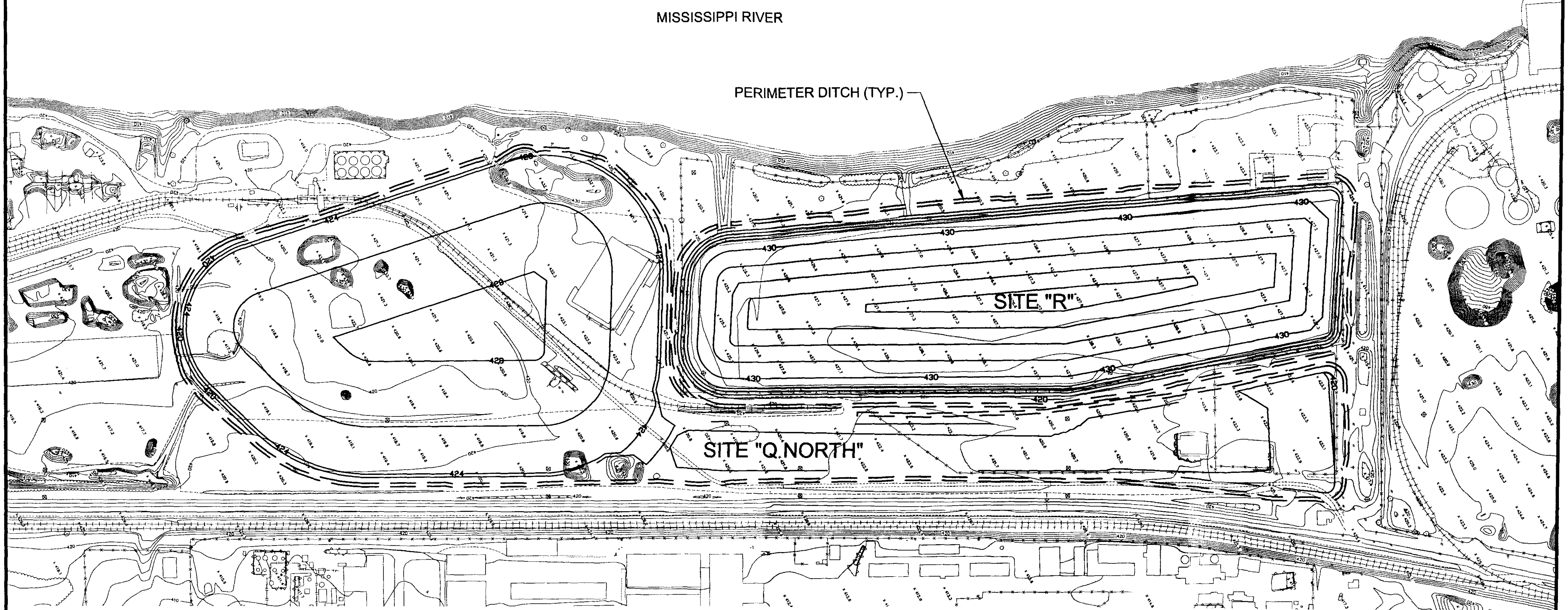
0 300

SCALE FEET

2 FOOT CONTOUR INTERVAL

SAUGET AREA 2 LOW PERMEABILITY COVER SAUGET, ILLINOIS		PROJECT NO. 2156088.07003
URS		
DRN. BY: TMS 10-31-03 DSGN. BY: ASN CHKD. BY:	CONCEPTUAL FINISH GRADING PLAN SITE "S", "O" AND "O NORTH"	FIG. NO. 9-3

J:\SAUGET AREA 2\GRADING\SITE PLANS.DWG



SITE "Q NORTH"
EMBANKMENT COVER DESIGN CRITERIA:

1% SLOPE (CENTER CROWNED)

FINISHED GRADE SHOWN, SUB-SURFACE LAYERS ARE:
- 1 INCH ASPHALT SURFACE COURSE
- 3 INCH ASPHALT BASE COURSE
- 6 INCH AGGREGATE
- 9 INCH SUITABLE FILL MATERIAL
- 18 INCH THICK LINER
- VARIABLE THICKNESS CLAY CAP (6 INCH MINIMUM)

DITCH SECTION: 3 FOOT DITCH BOTTOM, 2 FEET DEEP WITH 2:1 SIDE SLOPES, 10 FEET FROM TOE OF EMBANKMENT

SITE "R"
EMBANKMENT COVER DESIGN CRITERIA:

4% SLOPE (CENTER CROWNED)

FINISHED GRADE SHOWN, SUB-SURFACE LAYERS ARE:
- 6 INCH TOP SOIL
- 18 INCH SUITABLE FILL MATERIAL
- 18 INCH THICK LINER
- VARIABLE THICKNESS CLAY CAP (6 INCH MINIMUM)

DITCH SECTION: 3 FOOT DITCH BOTTOM, 2 FEET DEEP WITH 2:1 SIDE SLOPES, 10 FEET FROM TOE OF EMBANKMENT

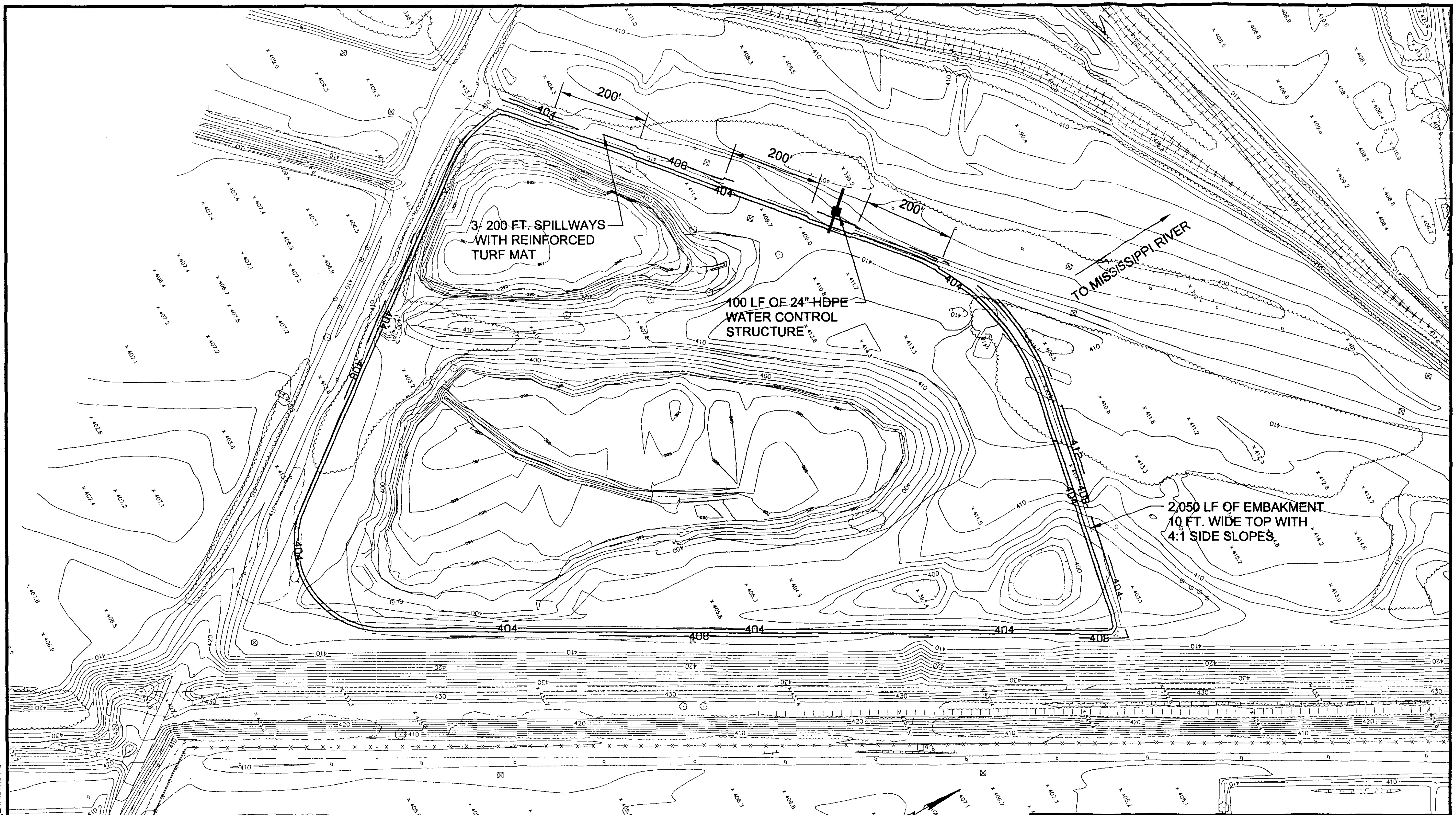
N

0 300
SCALE FEET

2 FOOT CONTOUR INTERVAL

SAUGET AREA 2 LOW PERMEABILITY COVER SAUGET, ILLINOIS	PROJECT NO. 2156088.07003
URS	
DRN. BY: TMS 11-10-03 DSGN. BY: ASN CHKD. BY:	CONCEPTUAL FINISH GRADING PLAN SITE "R" AND "Q NORTH" — FIG. NO. 9-4

J:\SAUGET AREA 2\GRADING\SITE PLANS.DWG



DESIGN CRITERIA:

TOP OF EMBANKMENT EL. = 407.25, TOP OF SPILLWAY EL. = 406.25
INTERIOR FINISH GRADE EL.= 403.25 (2 FT. OF IMPOUND WITH 1 FT. OF FREEBOARD)

FINISHED GRADE SHOWN, SUB-SURFACE LAYERS ARE:
6 INCH TOP SOIL ABOVE 18 INCHES SUITABLE FILL MATERIAL
WITH NON-PERMEABLE LINER ABOVE 6 INCH LEVELING COURSE

0 200
SCALE FEET

2 FOOT CONTOUR INTERVAL

SAUGET AREA 2 WETLAND CONSTRUCTION SAUGET, ILLINOIS	PROJECT NO. 2156088.07003
URS	
DRN. BY: TMS 11-18-03 DSGN. BY: BDL CHKD. BY:	CONSTRUCTED WETLAND CONCEPTUAL PLAN FOR "Q" PONDS ALTERNATIVE 3 — FIG. NO. 9-5

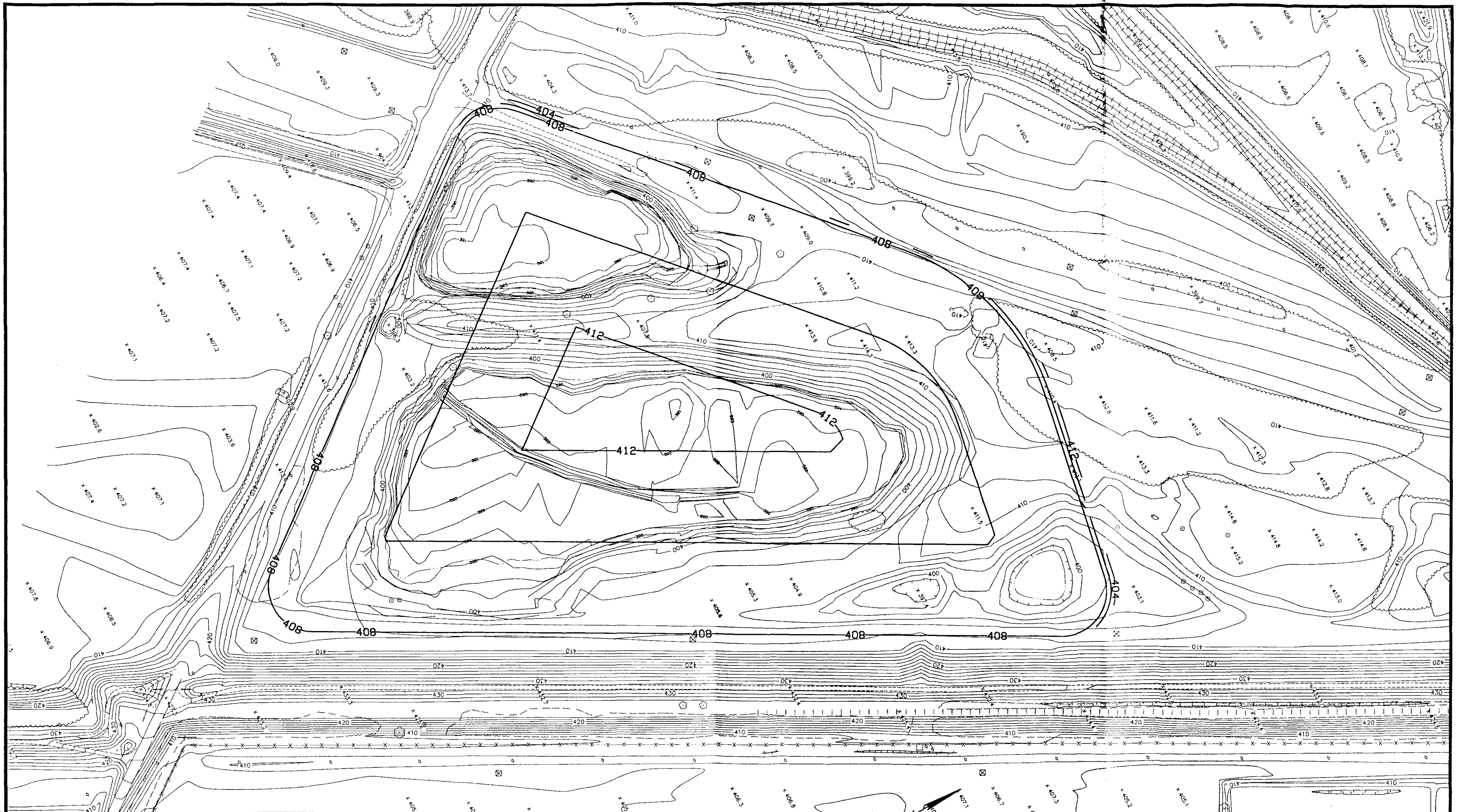
J:\SAUGET AREA 2\WETLAND\EXHIBIT.DWG

0 200
SCALE FEET

2 FOOT CONTOUR INTERVAL

SAUGET AREA 2 WETLAND CONSTRUCTION SAUGET, ILLINOIS	PROJECT NO. 2156088.07003
URS	
DRN. BY: TMS 11-18-03 DSGN. BY: BDL CHKD. BY:	CONCEPTUAL PLAN FOR POND LINING – "Q" PONDS ALTERNATIVE 4 — FIG. NO. 9-6

J:\SAUGET AREA 2\WETLAND\EXHIBIT-1.DWG



LEGEND

—— 412 —— PROPOSED FINAL GRADE ELEVATIONS

0 200

SCALE FEET

2 FOOT CONTOUR INTERVAL

SAUGET AREA 2 WETLAND CONSTRUCTION SAUGET, ILLINOIS		PROJECT NO. 2156088.07003
URS		
DRN. BY: TMS 11-18-03 DSGN. BY: BDL CHKD. BY:	CONCEPTUAL PLAN FOR POND FILLING – "Q" PONDS ALTERNATIVE 5	FIG. NO. 9-7

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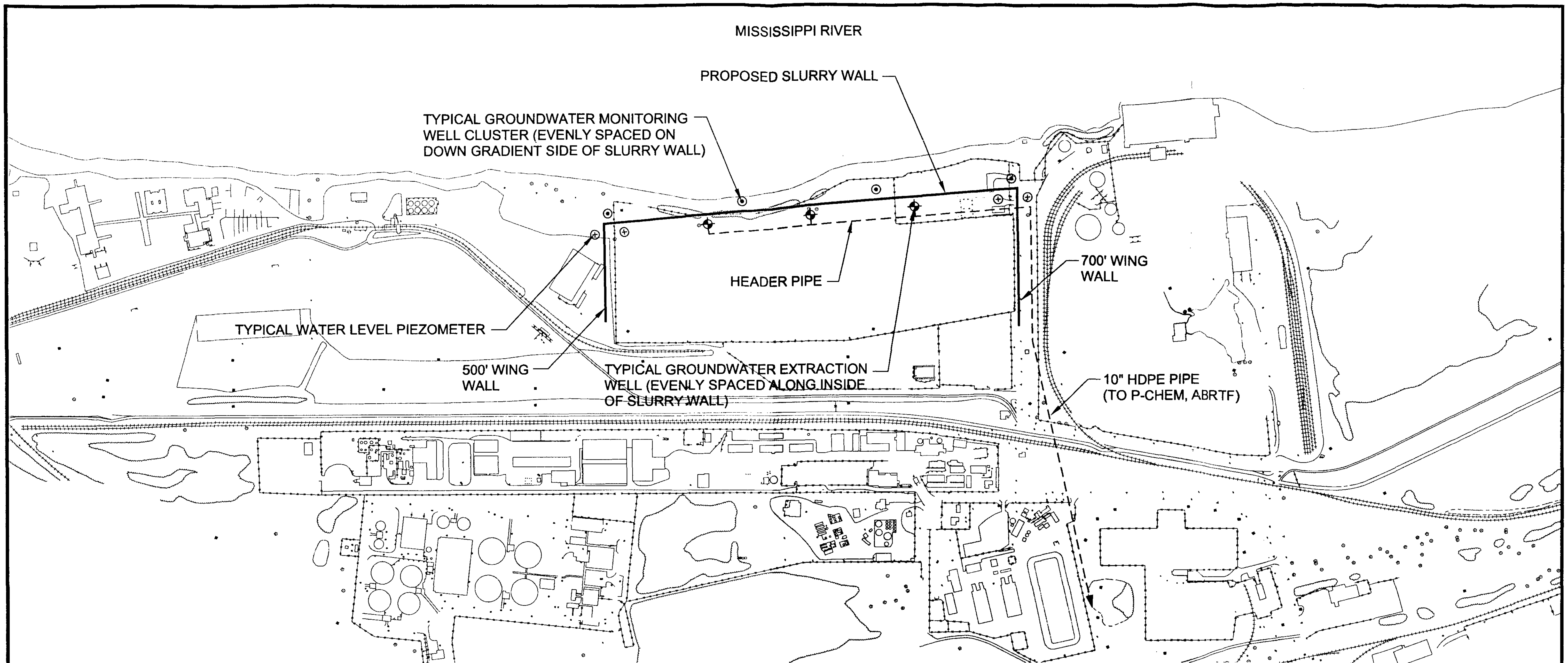


PRINCIPAL DESIGN COMPONENTS:

- 2,100 FOOT SLURRY WALL (BARRIER WALL)
- 3 EXTRACTION WELLS (WITH HEADER PIPE)
- 4 MONITORING WELL CLUSTERS
- 4 PIEZOMETERS

NOTE: GROUNDWATER EXTRACTION RATE IS APPROXIMATELY 5,359 GPM.

LEGEND

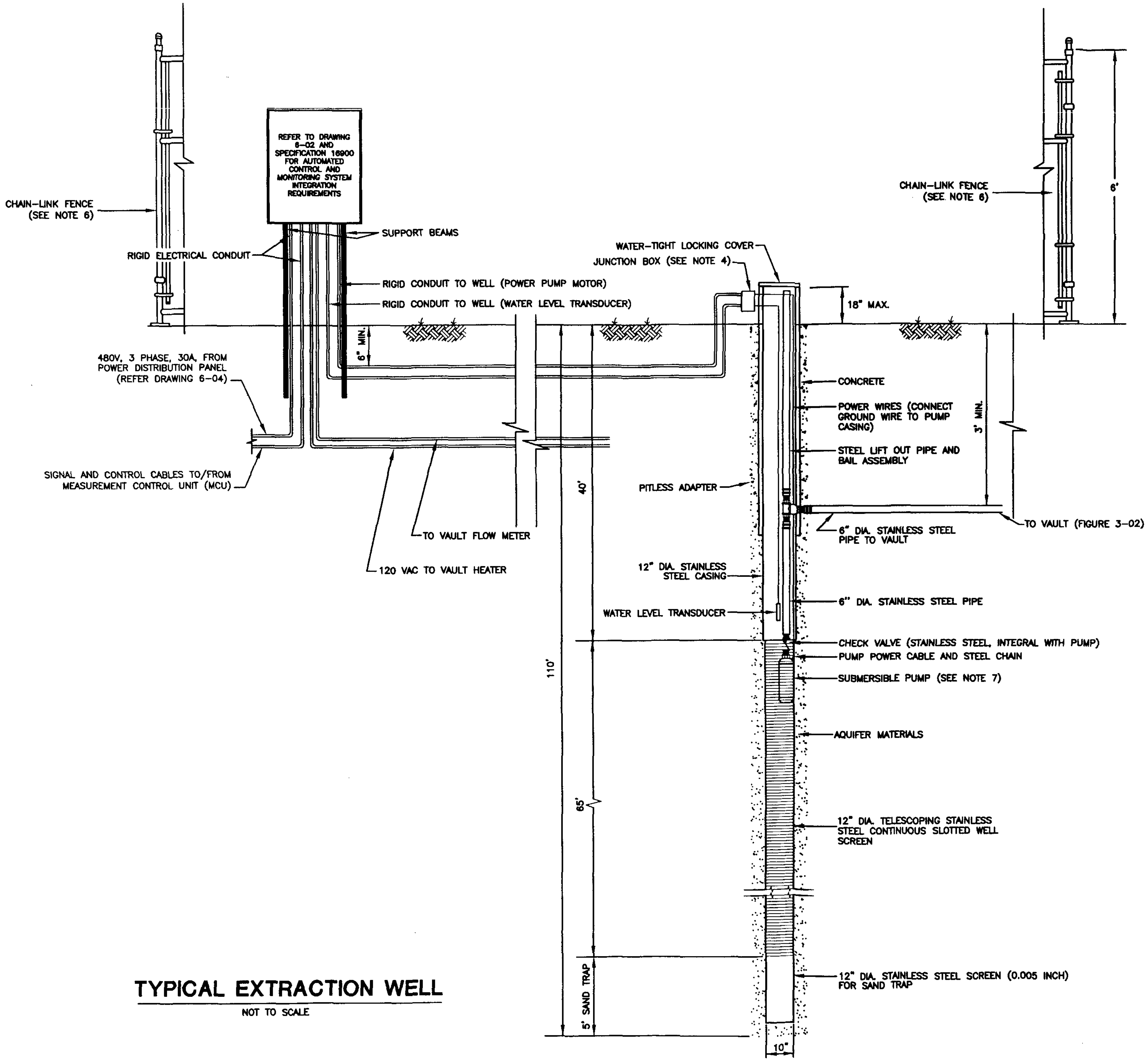
- BARRIER WALL
- HEADER PIPE
- GROUNDWATER EXTRACTION WELL
- GROUNDWATER MONITORING WELL CLUSTER
- WATER LEVEL PIEZOMETER

0 500

SCALE FEET

SAUGET AREA 2 GROUNDWATER ALTERNATIVES SAUGET, ILLINOIS	PROJECT NO. 2156088.07003
URS	
DRN. BY: TMS 11-06-03 DSGN. BY: CJF CHKD. BY:	CONCEPTUAL DESIGN GROUNDWATER ALTERNATIVE 3
FIG. NO. 9-8	

December 16, 2003 9:24:28 am (TMS)
J:\Sauget Area 2\Slurry Wall\ALTERNATE-3.dwg



TYPICAL EXTRACTION WELL

NOT TO SCALE

NOTES

1.) TYPICAL WELL CONSTRUCTION. ACTUAL PLACEMENT OF WELL SCREEN AND CASING TO BE MODIFIED BY REMEDIAL DESIGNER BASED ON FIELD CONDITIONS.

2.) COMPLETION OF EXTRACTION WELLS SHALL BE UNDER THE DIRECT SUPERVISION OF THE REMEDIAL DESIGNER OR OTHER QUALIFIED PROFESSIONAL DESIGNATED BY SOLUTIA. THE FINAL COMPLETION OF EXTRACTION WELLS WILL BE BASED ON ACTUAL CONDITIONS ENCOUNTERED DURING WELL CONSTRUCTION.

3.) SUPPORT PUMP AND DISCHARGE PIPING FROM TOP. DO NOT ALLOW PITLESS ADAPTER TO SUPPORT PUMP UNLESS PITLESS ADAPTER IS CONCRETED IN PLACE. PROVIDE STAINLESS STEEL CHAIN TO ATTACH TO PUMP.

4.) ALL WIRING BETWEEN THE EXTRACTION WELLS AND CONTROL PANEL SHALL BE SUBMERSIBLE. CONNECT WIRES TO WELL CONDUIT USING SEAL TIGHT CONNECTORS. PROVIDE ELECTRICAL BOX (NEMA 6)AT GROUND SURFACE SIZED TO STORE A MINIMUM OF 5 FEET OF EXCESS WIRES (SLACK) COILED NEATLY IN JUNCTION BOX FOR ADJUSTING DEPTH IN WELLS.

5.) PRESSURE TRANSDUCER TO BE INSTALLED IN EACH WELL IN ORDER TO GAUGE DRAWDOWN, 5 FEET ABOVE TOP OF PUMP.

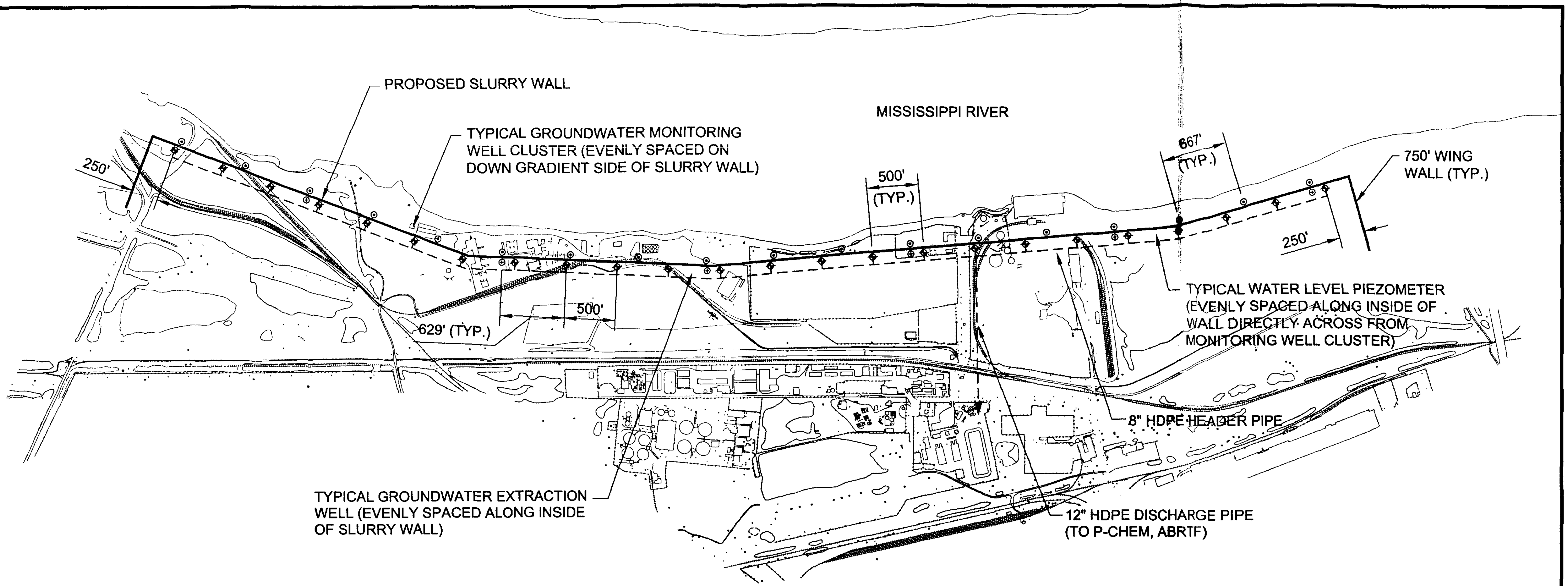
6.) CONTRACTOR SHALL INSTALL A CHAIN LINK FENCE ENCLOSURE AROUND THE PERIMETER OF EACH WELL.

7.) SUBMERSIBLE PUMP TO BE PLACED WITHIN SCREEN AT DEPTH OF 60 FEET BELOW GROUND SURFACE.

8.) EXISTING WELL EW-2 HAS 10.75-IN. O.D. CASING AND 10-IN. TELESCOPING WELL SCREEN.

SOURCE: SITE R GROUNDWATER MIGRATION CONTROL SYSTEM, DESIGN DRAWINGS, URS, JULY 3, 2003.

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: RAD 11/17/03 DSGN. BY: CJF CHKD. BY:	TYPICAL EXTRACTION WELL — FIG. NO. 9-9



PRINCIPAL DESIGN COMPONENTS:

12,000 FOOT SLURRY WALL (BARRIER WALL)

24 EXTRACTION WELLS (WITH HEADER PIPE)

18 MONITORING WELL CLUSTERS

6 PIEZOMETERS

NOTE: GROUNDWATER EXTRACTION RATE IS APPROXIMATELY 3,000 GPM.

LEGEND

- BARRIER WALL
- HEADER PIPE
- GROUNDWATER EXTRACTION WELL
- GROUNDWATER MONITORING WELL CLUSTER
- WATER LEVEL PIEZOMETER

0 1000

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS	PROJECT NO. 21560888.07001
URS	
DRN. BY: TMS 11-06-03 DSGN. BY: CJF CHKD. BY:	CONCEPTUAL DESIGN GROUNDWATER ALTERNATIVE 4	FIG. NO. 9-10

December 16, 2003 9:25:27 am (TMS)
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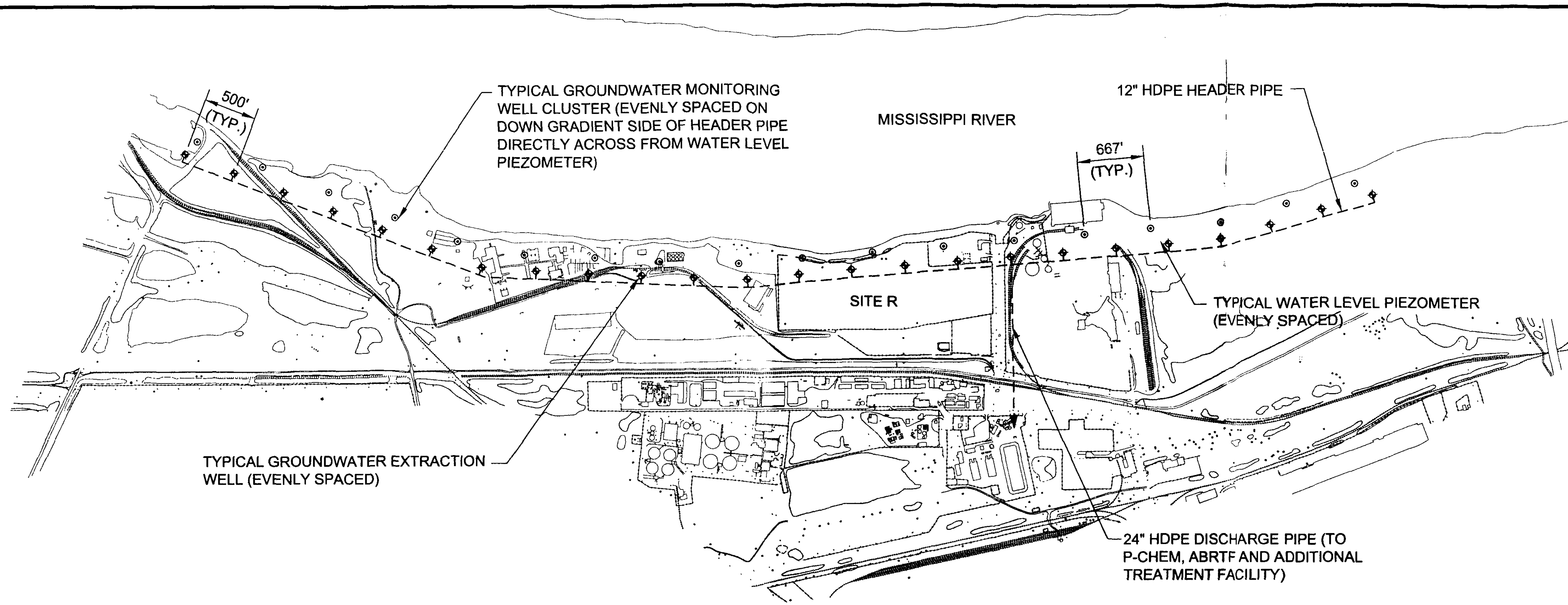

PRINCIPAL DESIGN COMPONENTS:

24 EXTRACTION WELLS (WITH HEADER PIPE)

18 MONITORING WELL CLUSTERS

NOTE: MAXIMUM SUSTAINABLE GROUNDWATER EXTRACTION RATE IS 1,100 gpm/well (26,400gpm)

LEGEND

- - - - HEADER PIPE

GROUNDWATER EXTRACTION WELL

GROUNDWATER MONITORING WELL CLUSTER

0 1000

SCALE FEET

SAUGET AREA 2 RI/FS SAUGET ILLINOIS		PROJECT NO. 21560888.07001
URS		
DRN. BY: TMS 11-06-03 DSGN. BY: CJF CHKD. BY:	CONCEPTUAL DESIGN GROUNDWATER ALTERNATIVE 5	FIG. NO. 9-11

December 16, 2003 9:26:26 am (TMS)
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